THE

AMERICAN JOURNAL

OF THE

MEDICAL SCIENCES.

Art. I. *On the Malignant Pustule; with cases.* By C. W. Pennock, M. D.: (with two coloured plates.)

The malignant pustule* is a gangrenous affection of the skin, characterized at its commencement by a vesicle filled with a sero-sanguinolent fluid, which being discharged, is succeeded by a small induration, surrounded by an areolar tumour; the tumified portion becomes gangrenous, the sphacelus extends rapidly from the centre to the circumference, constitutional symptoms of an alarming character supervene, and if the disease be not arrested, death speedily ensues.

This affection is produced by the inoculation of an animal virus, which is generally communicated to man, either by animals which have died of the "murrain" of our farmers, or the *sang du rate*, or the "*feu*" of the French.

This disease, which is very common in certain parts of France, particularly in Burgundy, Provence, Languedoc, Lorain, and French Comte, is comparatively rare in this country; yet, the melancholy histories of sudden death after the examination of dead quadrupeds, which are so often recorded in our newspapers, prove, that the investigation of this subject is one of great importance. In the sections of France just mentioned, it has been observed, that this disease is very

*Synonymes. Persian fire; Pustule Maligne; Puce Maligne; Charbon Malin de la Bourgogne.

frequent in low and marshy districts of country; that it appears in hot seasons, after the meadow lands have been submerged by inundations; when the pasturages are of bad quality, the fodder mouldy, mildewed, or charged with insects in a state of putrefaction. Animals fed with this vitiated provender, are subject to fevers, accompanied with gangrenous inflammations, which cause them to perish very suddenly. Observation proves, that the virus causing the malignant pustule, is transmitted to man, not only by inoculation from the examination of the dead bodies of these animals, but that the slightest contact with their hides, hair, or in fact any portion of the carcass, has often developed the disease. This poisonous quality is not destroyed even by manufacturing the wool or hair into cloths, or the hides into leather.* The disease has also been communicated by the dissection of hares or wolves, proving that the virus may be produced among the herbivorous and carnivorous animals, whether domesticated or wild.† Chabert asserts, that poultry is subject to a disease which produces the same effect upon man as the causes previously mentioned. Insects, it is said, have transmitted the virus from diseased animals to man.

The malignant pustule may also be produced by the secretions and excrements of living animals affected with the gangrenous disease alluded to. Cases are reported, in which it was caused by the introduction of the hand into the rectum and throats of cattle.

The wounds which occur in the dissection of the human subject, have never been known to be followed by an affection similar to that of the disease in question.

From the foregoing facts, it follows, that the malignant pustule rarely attacks any other than agriculturalists, butchers, tanners, smiths, labourers, and those engaged in handling skins, or who work in wool. It is very seldom that more than one pustule is seen on the body, and it usually manifests itself on those portions of the skin which are habitually uncovered, as the face, hands, arms, legs, or breast. When it is seen in other situations, it is owing to special circumstances; thus, instances are cited where it occurred on the back of a shepherd who carried the warm skin of a sheep, just dead of a malignant disease, over his shoulder; and a butcher's boy having placed the bloody knife between his teeth whilst he prepared the car-

*Boyer, Traite des Maladies Chirurgicales, 4me edition, tome ii. page 65, art. Pustule Maligne.

†Enaux and Chaussier, Methode de Traiter les Morsures des Animaux enragès, suivie d'un precis sur la Pustule Maligne.

cass of a bullock which died of the disease, was inoculated with the virus in the mouth.

It has been a disputed point among physicians, whether the malignant pustule ever occurs in man as an idiopathic disease. The most eminent pathologists, however, who have investigated the subject, are now of opinion that it always depends on an external and local cause, and that it results from the absorption or inoculation of an animal virus.*

Can the flesh of animals which have died of the diseases producing the malignant pustule, be eaten with impunity? This question has been answered differently by different writers: Morand,† Thomassin,‡ Duhamel§ reply in the affirmative, whilst Enaux and Chaussier report facts entirely opposed to their views. The latter writer mentions several instances where death took place soon after partaking of this perfidious food. These facts, apparently opposed to each other, merely prove that nature is sometimes enabled to throw off the virus without producing bad consequences, whilst in other instances fatal results ensue; hence the necessity of rejecting the flesh of all animals which have died from suspicious causes.‖

An epizootic prevailed among the cattle in the vicinity of Philadelphia in the autumn of 1834, by which a large number of these animals were destroyed. It was not confined to the bullocks which had been brought from the interior of the country, but took place equally among the cows fed in and around the city, more especially those which grazed upon the vacant commons. Several persons who had been engaged in taking the skins from the dead bodies of these animals were inoculated with the virus; one of these individuals died after excision of the part; three others came under my care, the details of whose cases I will now present to the medical profession.

Case I. Morris Hagarty, aged 27, brickmaker, intemperate, of good constitution, not subject to cutaneous diseases, on the 2nd of September, 1834, skinned a cow which had died a few hours before of the "murrain."

Whilst performing this operation, a mosquito bit him on the upper and back part of the left thumb, which he scratched with the other hand covered with blood. Four days afterwards, a vesicle of the size

*Boyer, Opera Citat. pp. 66, 67. †Opuscules de Chirurgie.
‡Dissertation sur le Charbon Malin de la Bourgogne, ou, la Pustule Maligne.
§Memoires de l'Academie Royale de Sciences.
‖Regnier, sur la Pustule Maligne, p. 17.

of a large pea, distended by red serosity, accompanied by a slight itching, but no pain, was observed on this spot; his general health was not then affected. On September the 8th, six days after the inoculation of the virus, the vesicle had increased to the size of a five cent piece, was of a purple colour, the itching became intolerable, the patient ruptured it by scratching, and a small quantity of red serum was discharged. Next day the vesicle was much enlarged, and numerous small vesicles appeared around it. On the 10th it became black and depressed in the centre, borders elevated, soft, and of a dark red or purple colour. Next day, the central dark point had increased to one third of an inch in diameter: patient experienced languor, chilliness, want of appetite, and was obliged to discontinue work; thumb and hand were then swollen, the absorbents red and painful, and the lymphatic glands at the elbow joint and arm pit much enlarged.

Sept. 12th. Present state. On the middle portion of the back of the thumb of the left hand, is a circular spot three-fourths of an inch in diameter, of a deep purple colour, depressed in the centre, elevated on the borders; surface indurated, except at the circumference; perfectly devoid of sensibility, and surrounded by vesicles containing dark red serosity. The thumb, hand, and fore-arm swollen, of a rose colour; the absorbents marked in their course by red lines extending to the arm-pit, are hard and painful; a lymphatic gland of the size of a pigeon's egg is seen immediately above the elbow, and four smaller in the axilla; pain felt in the entire limb, and is much aggravated by movement. No pain in the head; intelligence perfect; sensibility unimpaired, except in and around the pustule; tongue coated in the centre with light fur; thirst; no pain upon pressure of abdomen; no nausea; constipation; surface of body dry and hot; pulse frequent, 90, of good volume; no other symptoms worthy of remark.

Treatment.—Cauterization of pustule and borders with lunar caustic, followed by application of poultice of lye and rye flour. Saturnine lotions to the rest of the arm; sulph. magnesia ℥j.

13th. No symptoms of fever; bowels open; the eschar of pustule firm, and resembles soaked and blackened leather; erysipelatous redness and pain of the arm much diminished.

The subsequent treatment was altogether local; sponging the arm with saturnine lotions, and the frequent application of alkaline poultices to the seat of the pustule. The erysipelatous inflammation disappeared in four days, the lymphatic glandular induration in a week, after which he resumed his usual occupation.

Case II. Neill Brown, aged 30, labourer, temperate, not subject to cutaneous affections, of good constitution, assisted Hagarty in skinning the cow mentioned in the preceding case.

He received a slight wound on the ulnar side of the left hand, which apparently soon healed. Six days afterwards, a vesicle of the size of a pin's head appeared on the spot of the incision; it gradually increased, and caused no inconvenience other than slight itching, until ten days after the inoculation. It was distended by a dark red serosity, and was then one-fourth of an inch in diameter, not painful, but attended with much itching, and was ruptured by scratching. Around the vesicle, the hand was swollen and red. Next day, (Sept. 13th,) when I saw him, the pustule* was one-third of an inch in diameter, circular, centre depressed, borders elevated and soft, middle portion hard and almost black, the rest dark purple and polished, the colour decreasing in intensity from the centre to the circumference. Entire surface insensible. A red areola, in which are numerous small vesicles, distended by dark coloured serum, surrounded it; hand slightly swollen and red; some heat, but no pain felt in the hand; no constitutional symptoms. The part was cauterized with vegetable caustic, crucial incisions was subsequently made through the gangrenous parts, and alkaline poultices were directed to be constantly applied. The eschar from the cauterized portion, presented the peculiar tenacity mentioned in the preceding case. The recovery was rapid, and in two weeks the patient resumed his work.

Case III. Adam Hill, aged 50, milkman, temperate; health good until within two years, since which time has suffered with hæmorrhoids and fistula in ano; has never been subject to cutaneous affections. On the 2nd of September, 1834, he skinned and subsequently dissected a cow which had died of the prevailing epizootic. He was not aware of having received any wound, but his hands were covered with blood for two hours. Four days afterwards, a small watery pimple of a red colour, of the size of a pin's head, attended by itching, but no pain, was seen on the back of the right hand, between the indicator and middle finger. It gradually increased in size, became purple, "resembling a blood-blister," was attended by itching, some heat, but no pain. Eight days after the examination of the cow, the vesicle was ruptured, and some red serum, but no pus, was discharged. "Next day," he says, "it resembled a pock, but was of a

*In these cases, the affection is spoken of, as *a pustule*, in accordance with the usual parlance, without meaning to imply the formation of pus, which has not been seen by the writer in any instance.

dark blue colour, and surrounded by several small watery blisters." These vesicles assumed the purple appearance, and were soon confounded in the larger central disease. This spot was entirely free from pain, but erysipelatous inflammation taking place, the arm became painful, followed by a chill, and fever, and delirium, through the night of September the 14th.

15th. *Present state.* On the back of the right hand is an irregular quadrilateral spot, the sides of which measure eighteen and twenty-six lines; central portion livid, indurated, depressed, surrounded by a dark yellow appearance, whilst the rest of the surface is elevated, elastic, of a dark purple colour, varying in intensity, and distended in points with a red serosity; entire surface devoid of sensibility, and has a polished aspect. In the surrounding areola are seen numerous small vesicles.* Immediately around this purple spot the hand is numb; elsewhere it is painful and swollen. Skin cold; countenance anxious; pulse small and frequent.

Treatment.—The pustule cauterized with vegetable caustic; three crucial incisions were subsequently made through the eschar, followed by applications of alkaline poultices. Patient directed to take sulph. quinine grs. j. every hour. Nutritious diet; porter; and at night to take pulv. Doveri grs. xv.

16th. Gangrene arrested, except in upper part of pustule; vegetable caustic applied to this. Pulse is fuller, and skin more natural. Continue the treatment.

17th. Gangrene arrested; the eschar remarkably firm and solid, resembling leather; slept well; perfect reaction.

Treatment.—Discontinue quinine; continue the rest of treatment.

The eschar was removed in a few days; cicatrization was rapid, and the patient recovered in two weeks.

Case IV. On the morning of April 16th, 1835, J. Hagarty, a milkman, aged 37, of good constitution, temperate habits, and not subject to cutaneous affections, skinned a cow which had just died of "the bloody murrain." He was not sensible of wounding himself in the operation, but carried the hide on the bare and bloody arm, (the right,) for more than an hour. Eight days afterwards (the 24th) he observed on this arm, a short distance above the wrist, a vesicle of the size of a pea, of a deep rose colour, without central depression or areola, and unattended either by pain, heat, swelling, itching or insensibility. The vesicle gradually increased in size, but did not pro-

*I am indebted to Mr. Drayton for the faithful delineation (Plate I.) which accompanies these notes.

duce any uneasiness until the morning of the 27th: it was then one-third of an inch in diameter, caused the sensation of great itching, was broken by scratching, and discharged a small quantity of claret coloured serum. His health until this time had been unimpaired; he now experienced languor, loss of appetite; through the day chill, succeeded at night by fever, delirium, nausea, but no vomiting. The central portion of the ruptured vesicle became p rple, and the arm assumed an erysipelatous appearance. Next day, 28th, at 10, A. M., when I saw him, the following symptoms were presented. On the back of the right fore-arm, two inches above the wrist, where the vesicle was yesterday ruptured, is a circular tumour, surface polished, depressed in centre, elevated on the border, central portion black and hard; colour diminishes in intensity towards its margin, where it is purple and less indurated than in the middle. It is devoid of sensibility, may be cut without the patient perceiving any pain, and is surrounded by numerous small vesicles, filled with red serosity. In the space of an inch and a half to two inches around this tumour, the limb is very hard, numb, and almost devoid of feeling. The entire fore-arm is swollen to twice its natural size, is of a deep rose colour, hot, painful, especially in the course of the absorbents, which are hardened and enlarged to the middle of the arm; the glands of the axilla are not swollen.

Some pain in the head, no ringing in the ears, senses perfect, (except the numbness in and around the pustule;) intelligence good; skin hot and dry; no appetite; thirst; tongue coated with thick white fur; no pain on pressure of abdomen; constipation; urine scanty and high coloured; no cough. Respiration and percussion normal. Pulse 90, full and hard.

Wishing to secure an accurate delineation of the pustule,* the treatment at first was limited to the exhibition of a saline purgative and an enema, neutral mixture, sponging the body, and saturnine lotions to the swollen limb. Gangrene proceeded very rapidly, the black central portion had increased by three, P. M., from the width of two lines to a circle of half an inch in diameter; the tumour and surrounding indurated surface was also greatly enlarged. The pulse had lost its fulness, but was more frequent, the countenance anxious, sensation of feebleness, swelling of the arm reached the axilla; glands of axilla enlarged; tongue dry.

*Plate II. exhibits a very correct representation of the disease, for which I am indebted to the skill of Mr. Oscar Lawson. Fig. 1, represents the pustule (reduced one-third,) as it appeared at 11, A. M., of April 28th, the 12th day after the inoculation. Fig. 2, is a delineation of the same pustule, three hours afterwards.

At half past three, P. M., applied vegetable caustic to the tumour, and at night ordered pulv. Doveri grs. xv.

29th. Slept well last night; temperature of skin natural; pulse 60, soft, and of good volume; tongue less furred; bowels open; no pain in the head; intelligence perfect; pain and swelling of the arm much diminished; eschar of tumour black and firm, resembling leather in consistence; no phlyctenæ; sensibility increased around the pustule. Poultice of lye and Indian meal to tumour; saturnine lotions to the rest of the arm; diet, weak chicken broth.

May 1st. Convalescence established; sensibility normal around the eschar.

3d. All appearance of erysipelatous inflammation has disappeared. The eschar separated on the 9th; cicatrization was rapid, and he resumed his usual occupations after the 12th.

In the preceding cases, the symptoms of the malignant pustule were well characterized. In two instances the virus was inoculated in consequence of wounds, and in the others it was transmitted by absorption. At periods, varying from three to eight days after contact with the dead bodies of the animals, a vesicle of the size of a grain of millet appeared on the point of inoculation without having been preceded either by heat, prurience, or tension. This vesicle gradually augmented, was attended by a sensation of itching, but no pain; its colour was dark brown or livid, broke, either spontaneously or by rubbing, and discharged a few drops of serosity. This period of the disease occupied from twenty-four to forty-eight hours; it corresponds with the first stage of Enaux and Chaussier, who divided the entire duration of this affection into four periods.

The *second period* of these writers, was characterized by the formation in the central portion of the ruptured vesicle, of a small, hardened, insensible, circumscribed tubercle, which was of a brown or livid colour, and soon became surrounded by a dark purple areola, in which numerous vesicles or small phlyctenæ were disseminated. The disease had now penetrated the entire thickness of the skin; the adjacent tissues became swollen and the pruriency was replaced by a feeling of heat, burning or gnawing in the contiguous surface.

This period continued but a few days, before the characters of the third period were perceived.

Third period. This was marked by the rapid extension of the central gangrenous portions; the vesicular areola spread over a greater space, became raised at the circumference, causing the centre to appear depressed. The contiguous parts were hard, swollen, benumbed and almost insensible; erysipelatous inflammation took place to a

considerable extent, and was accompanied in three instances by intense fever. It was at this stage of the disease that the treatment was generally commenced, and, consequently, no opportunity was presented of seeing the 4th stage. This period, when fatal, is usually of short continuance, is marked by increased intensity of all the symptoms previously mentioned, and to these are superadded the worst form of adynamic fever.* If, on the contrary, the termination is favourable, the previous symptoms become less intense, the swelling diminishes, the patient experiences a sensation of heat in the parts adjacent to the gangrenous portions, suppuration is established between the pustule and the surrounding skin, and the eschar is detached.

The malignant pustule does not, however, always pass through the preceding four periods, nor are their duration always the same. In general, however, the first which is characterized by prurience and the formation of the vesicle, continues from twenty-four to forty-eight hours, but its duration is sometimes much less. The second, marked by the formation of the areolar vesicle, generally lasts but a few hours, but sometimes continues for several days. The third, which is indicated by the appearance of the tumour, is almost immediately followed by constitutional symptoms of an alarming character, when the disease has a fatal termination, and, on the contrary, continues several days, when the affection is arrested and the gangrenous eschar separates from the contiguous surfaces. The fourth period is generally of very short continuance. Sometimes the progress of the disease is so rapid that the four periods are confounded and cannot be distinguished. Under some favourable circumstances, the gangrenous progress is limited to the second or early stage of the third period. When this occurs, the disease is surrounded by a red line of inflammation; sensation and warmth are manifested in the contiguous surfaces, the pulse becomes fuller, and all the appearances assume a favourable aspect.†

It follows from the preceding history of the cases of malignant pustule, that gangrene took place without having been preceded by either redness, swelling, pain, or any of the indications of inflammation; that phlogosis in the parts contiguous to the primitive disease and the constitutional symptoms were subsequent to, and dependent upon the mortification. There is a striking analogy between this affection and that of the dry mortification, in which sphacelus also appears without any symptoms of inflammatory action. Pathologically,

*Boyer, Maladies Chirurgicales, tome ii. p. 72. †Boyer, Opera Citat. p. 73.

these facts are exceedingly interesting, as they demonstrate that gangrene may take place as a primitive affection. M. Louis has long taught this doctrine, and in several instances has proved this to be the case in gangrene of the lungs, in which disease the symptoms of pneumonia were consecutive upon those of that affection. A case reported by Dr. Gerhard, confirming this opinion, occurred in the Pennsylvania Hospital, in the summer of 1835.

Diagnosis.—Malignant pustule at its first manifestation, has sometimes been mistaken for the effects of the bite of gnats or bugs. The small indurations resulting from this cause are generally very numerous, present a small central yellow point, and are surrounded by a red inflamed surface. The furuncle, at its commencement, is not marked with a vesicle, as the malignant pustule; the pustule is insensible, the surrounding parts become numb, and a diffused, erysipelatous inflammation is observed in the contiguous surfaces; these are circumstances not observed in the bile.

When the malignant pustule has acquired a large size, and when mortification is manifested over a considerable extent of surface, it cannot be confounded with any other diseases than those of the gangrene of the cheeks, lips or gums observed in children, or with the carbuncle of the plague. Now, phlegmonous inflammation is not *preceded* by a vesicle or pustule; it is not contagious; ordinarily, it becomes gangrenous only by excess of inflammation; it is generally advantageously treated by sanguine depletion, which is almost always extremely dangerous in the treatment of the malignant pustule.

In the gangrenous affection of children, the disease begins in the interior of the mouth, and extends consecutively to the skin.

Though there are some points of resemblance between the carbuncle and malignant pustule, yet it would be a great error to suppose that the first is only a variety of the last.*

The causes of the malignant pustule and those of the carbuncle of the plague are essentially different; those of the first being external, whilst those of the latter are internal. The virus causing the malignant pustule, like that of all inoculated poisons, acts first on the point where it is deposited; the local affection always precedes the general constitutional symptoms, which are never induced until the pustule has passed through its different periods; in fact, the pustule may terminate without affecting the general economy. In the carbuncle, on the contrary, the general affection is the essential disease; it precedes the formation of the carbuncle, which is merely the result of it.

*Boyer, Opera Citat. p. 74.

Sheep are subject to a disease (carbuncle) which resembles the malignant pustule in all its characteristics; though some authors have endeavoured to point out differences between them, yet, as inoculation from the diseased surface produces the malignant pustule, Rayer considers their identity as proved.

The *prognosis* of this disease, in its early stages, is singularly various, according to the constitution, habits, and idiosyncracies of the patients, &c. Death has often taken place in twenty-four to thirty-six hours from its commencement; its progress, however, is ordinarily much less rapid, and in a very large proportion of cases, may be arrested. The disease is considered as presenting a much more formidable character when it has its seat on the head, neck, or body, than when it affects the extremities. When it attacks the neck, it is peculiarly dangerous, in consequence of the compression which the œsophagus and trachea are subjected; seated on the eyelids, loss of sight is to be feared. When the disease affects a considerable surface, or if numerous pustules be manifested, the danger is greatly increased. Occurring in pregnant women, the prognosis is unfavourable, as the affection often causes abortion, and death may result from the prostration from loss of blood and the fatigue of the accouchement. Extremes of heat or cold in atmospheric temperature, are alike unfavourable to its happy termination.

Treatment.—The malignant pustule is always dependent upon an external and local cause, and if not arrested in its early stages, inevitably results in gangrene attended with constitutional symptoms of an alarming character and frequently fatal in their termination,—the first indication in the treatment of the affection is, therefore, to protect the adjacent parts from its action, and to circumscribe the original disease within the smallest possible limits. Experience has shown that this is best effected by the combined and judicious use of scarifications and the application of caustic to the diseased surface.

To be efficacious, the scarifications should be sufficiently deep to penetrate through the gangrenous portions, but not to involve the sound parts beneath the pustule. The advantages of scarification are, that they cause the discharge of the morbid secretions of the part, and allow the immediate action of the remedies upon the gangrenous surfaces. If the incisions are carried too deep, they are dangerous, inasmuch as they invariably tend to extend the mortification, not only by irritation, but also by direct inoculation from the virus of the pustule.

The caustics, however, are the most valuable and truly efficacious means of treating this disease. By their use the disease is isolated

from the rest of the system; increased vitiality is excited in the adjoining surfaces, healthy action is induced, and the eschar is detached by the ordinary process of suppuration.

The caustics which are preferred are the liquid muriate of antimony, caustic potash, and nitrate of silver.

When the disease is at its commencement, the vesicle should be opened, the serosity it contains absorbed by lint, and the surface should then be cauterized by either of the above named escharotics. If the virus has been deposited superficially, choice may be made either of the muriate of antimony or lunar caustic, but, if the morbid appearances be deep in the cellular tissue, the vegetable alkali should be preferred. An alkaline poultice may be applied to the part, which should be examined in a few hours. If no areolar vesicle form, if no hardness or numbness exist in the surfaces; if only slight pain, without the sensation of gnawing or burning be felt, the caustic has been applied over the entire diseased surface, and simple dressings, according to circumstances, are sufficient for the subsequent treatment. If, however, there should be observed around the eschar, a compact and hard tumour—if an areolar vesicle should form, or if the surrounding surfaces become much swollen, a second application of caustic is necessary, previously taking the precaution to make crucial incisions through the eschar, in order that the escharotic may act upon the contiguous parts.

This treatment is adapted, not only to the early, but to the more advanced periods of the disease. Under these circumstances, when the gangrenous portion is large, and impermeable like leather, local scarifications are especially important, as otherwise the topical applications would not extend to the sound parts, and consequently, would be useless. The caustic should be freely applied, so as to comprehend, not only the diseased, but also the surrounding surfaces. From time to time the eschar should be detached, and caustic reapplied, if mortification exists; if not, stimulating topical applications will conduce to the speedy restoration of healthy action. Excision of the pustule has been attempted, but the melancholy history of the cases where it has been resorted to, prove that it is extremely hazardous.*

Deceived by the inflammatory appearances of the swelling and tension which accompanies malignant pustule in the third and fourth periods, venesection or topical depletion has been used by practitioners unacquainted with the character of the affection. The results have been very unfortunate, and it is now universally conceded, that sanguine depletion, in any form, should not be employed.

*Regnier, Sur la Pustule Maligne, pp. 23, 24.

When the malignant pustule is of but small extent, and whilst it has produced no influence on the general system, it may be cured by local remedies; but when, on the contrary, constitutional symptoms are manifested, it then becomes necessary to combine with these an internal treatment calculated to meet the emergency. Generally speaking, the indications are those which are presented in the low forms of typhoid fever. The exhibition of quinine alone or combined with camphor or the mineral acids, is strongly recommended by Boyer, (Op. Cit. p. 82.) Purgatives and emetics have generally been been found to be injurious.

As regards the diet, it should be restricted to the farinaceous articles during the violence of the disease.

Numerous cases might be cited to show the propriety of the treatment just proposed; those reported by Boyer illustrate it very forcibly.

ART. II. *Medical Statistics; comprising a series of calculations and tables, showing the mortality in New York, and its immediate causes, during a period of sixteen years.* By CHARLES A. LEE, M. D.

The connexion of medical statistics with the condition of the healing art, is too obvious to need remark. Nor are the illustrations which they furnish of the manners, customs, and history of mankind, less striking or important. They aid us in determining the comparative salubrity or unhealthiness of different countries, or different districts of the same country; the value of human life in its different periods, and in different ages and parts of the world; and the fatality of different diseases, as affected by epidemics, climate, various modes of treatment, and local causes. The graduation of life-assurance and annuity premiums; the influence of alcoholic drinks; of luxurious habits of living; of condition, profession, and modes of life; the increase of population; the effects of air and water—these and many other topics are illustrated in a very satisfactory manner by accurate statistical tables.

The following tables have been prepared with much care, and it is believed will be found as correct as most calculations of a similar kind. Indeed we may confidently claim for them a greater degree of accuracy than is to be met with in most European tables of this nature, where the report of deaths is not required to be made by

medical practitioners, as is done in this city. They are perhaps not as extensive as could be desired, as they embrace only a period of sixteen years; this, however, was unavoidable, and occasioned by want of satisfactory data. The number of deaths is very accurately ascertained by the existing regulation, which requires the sextons of the different public burying grounds and cemeteries to furnish the City Inspector with certificates from the attending physician, stating the age, sex, place of nativity, disease, &c., of each case of interment, under a heavy penalty for neglect. Those who are removed to the country for interment are not reported; but their number is probably about equalled by those brought to the city for burial. As to the accuracy with which diseases are designated, in the present improved state of medical science, mistakes ought not very often to occur, though it is to be expected that the very extensive employment of quacks in the treatment of disease must induce a degree of uncertainty; but as this is an evil not confined particularly to this city, it will not affect the value of such tables for the purpose of comparison. With respect, however, to a certain class of chronic diseases, there must be greater or less liability to error until the science of pathology, as based on autopsic examinations, is better understood. It will be sufficient to name debility, decay, marasmus, atrophy, nervous disease, and convulsions, as furnishing examples of misnomer, often founded in absolute ignorance. Most children that die of diseases of the brain, and often of other organs, perish in convulsions; and there can be no doubt, from the large number reported under this head, that a symptom is too often substituted for the disease itself.

With respect to the table exhibiting the mean duration of human life in New York, it should be recollected that there are peculiar causes in operation which contribute to lower it beyond the standard of Philadelphia, Boston, or any other Atlantic city, though we are not satisfied that it is lower. The principal of these is the immense immigration of poor foreigners who annually land in this city, destitute of the comforts and even necessaries of life. In 1829 there were 11,501; in 1830, 21,433; in 1831, 22,607; in 1832, 28,283; in 1833, 16,000; in 1834, 26,540, and in 1835 a still larger number. During the present month of May there have already arrived upwards of 15,000, and there is no doubt that the number during the year 1836 will swell to 50,000. It is also well known that a large number of those who arrive at Quebec from Ireland make their way directly to this city. Arriving, as they mostly do, in the spring and summer, instead of going directly into the interior, a large proportion seek the cheapest lodgings, where, huddled together in filth, and destitute of

proper nourishment, they perish in large numbers. Out of twelve children crowded together in a single apartment, in a dwelling similarly crowded in every part, eleven died during the summer of 1835; two adults also died. Besides this there are thousands smuggled into the city who land at Amboy, and other places on the coast, of whom no account can be taken. That a large proportion of the deaths occur among the poor transient population, is evident from the fact that in 1834, of 971 persons who died of cholera, 361 were buried at the public expense; a still larger ratio in 1832; and out of 5,537 interments in 1830, 1,177 were paupers, and 1,110 buried in the churchyard of St. Patrick's cathedral, making one-fourth of the whole number, who died in a state of complete destitution. During the year 1834 there were only 67 interments in all the Presbyterian grounds in the city, and but 85 in the Episcopal, including the new marble cemetery. The correctness of this statement will still further appear, when we find that in the year 1834 there were 23,444 gratuitously supplied with medicine and medical treatment by the New York City Dispensary, and 4,000 by the Northern Dispensary. If to these be added those admitted to the City Hospital and the Almshouse at Bellevue, we have a grand total of more than 30,000 patients annually provided for at the public expense in this city; of these at least nine-tenths are foreigners.

In proof of the general healthiness of this city, apart from the influence of the causes above alluded to, we would refer to the statistics of that most excellent institution, the House of Refuge for the reformation of juvenile delinquents. This was founded in 1824; since which time there have been received into the institution 1670 children, of whom eighteen only have died, being a fraction over one per cent. Up to the year 1833 there were but five deaths out of 1241 who had been inmates of the establishment, being but one to 248, not one half per cent. Out of 919 children who have been received at the New York Orphan Asylum since its establishment in 1806, there have been 75 deaths, of which 18 occurred in the year 1834, making a total of 8.16 per cent., and deducting the deaths by cholera, 6 per cent. of the whole number. From 1814 to 1820 it is a singular fact that there was not a single death in the institution, though there were generally over a hundred inmates; and in 1832, during my attendance, there was but a single death among 120 children, of whom there were not more than ten that escaped an attack of cholera, thus proving that the most malignant diseases lose much of their fatality when met by prompt treatment and good nursing. It appears then most conclusively, that the excess of mortality in New York above that of some

other American cities, is owing principally to the cause above mentioned, and is confined to the extreme poor and the lowest class of the foreign population; and that the mean duration of human life among the middling and better classes is as great as in any other city in the world. Owing to the mode in which the reports have been kept by the City Inspectors heretofore, it is impossible to ascertain the ages at which the deaths from different diseases occurred, without referring to each individual case; this very important item, however, will no doubt be supplied hereafter, by the talented gentleman who now fills that office, Dr. John Sickels. As the practitioners of midwifery are not required by law, as in Philadelphia, to report cases of births, the number cannot be ascertained, except by calculation based on the quinquennial reports of the census. It is believed, however, that equal, if not greater, accuracy may be obtained in this way, as it is impossible to insure a general compliance with a regulation of such a nature.

Topography, &c. of New York.—The city of New York lies in 40° 42′ north latitude, and 74° 1′ 8″ west longitude from Greenwich. It occupies the southern part of the island of Manhattan, and extends about three miles on the North river and about the same distance on the East river. The space which it occupies is thus of a triangular shape, the surface being generally regular, and gently descending from Broadway to each river that washes its sides. There are portions of the city, such as what is called the collect, and others, which were once filled with stagnant ponds of water, or were low, swampy grounds. These were filled by gravel and sand, from hills which were levelled in different parts of the island, and this process of leveling and filling-in has gone on until all "the high places have been brought low, and the rough places made smooth." The consequence is, that considerable portions of the city have been built on made ground, especially those near the wharves. The island of New York is of the tertiary formation, resting on gneiss and granite. The latter, however, only forms veins or beds in the gneiss rock, and does not prevail to any great extent. At the point of the island near the Battery the rock lies about 90 feet below the surface; from this it gradually rises, till it appears above the soil about three miles from the City Hall. The part on which the city stands is composed entirely of sand and gravel, deposited in regular strata, showing most evidently the action of water in its formation. Imbedded in this in many places are found immense quantities of bowlders and stones suitable for paving, rounded and worn smooth by friction. A large portion of these are *green stone*, and must have come from the palisados across the

Hudson, as there is no other locality in the vicinity where it is found in place. In digging away the hills in the eastern part of the city, petrifactions of various kinds, such as *orthocerites*, *pectinites*, *terebratulites*, &c., have been found; and in one place near Corlaer's Hook, clams and oyster shells, and the shell of a *pholas* now existing in our waters, have been met with in a tough bluish clay of a disagreeable smell, some forty or fifty feet beneath the surface. The *gneiss* rock which forms the base of the whole island is distinctly stratified, and runs in a north-east direction. In some places, especially on the eastern side of the island, the strata are nearly vertical, although they are generally more or less inclined to the east, and dip towards the west. This is now extensively quarried, and makes excellent building stone for foundations, as well as flagging and curb stones. The northern part of the island is very rocky and uneven, and the greatest elevation is at Harlaem Heights, twelve miles from the city, being 238 feet above the river.

The climate of New York is extremely variable, the thermometer sometimes varying from 20 to 30 degrees in the course of twenty-four hours. The mean temperature for several years is 53° 78′; the mean temperature of winter, 29° 84′; of spring, 51° 26′; of summer, 79° 16′; of autumn, 54° 50′. The mean temperature of the warmest month is 80° 78′, and of the coldest, 25° 34′.

Water.—New York has always been supplied with water from wells sunk to a greater or less depth beneath the surface, or by boring into the solid rock. This has been done in a few places to the depth of several hundred feet, as in Greenwich Lane, Bleecker Street, &c.; but the result, as to finding a sufficient supply of water, has been very uncertain. In some instances, no water could be found, except above the surface of the rock, and, in others, where a supply has been obtained, it has in a short time, from some cause, entirely failed. Where it is met with, it is usually of a good quality. The water contained in most of the wells, in the lower half of the city, is more or less brackish, and very impure. A gallon of water from the well belonging to the Manhattan Company, in Reed Street, yielded, on analysis, 125 grains of solid matter. In the densely populated parts of the city, the water from a large proportion of the wells is nearly if not quite as impure. As we go north, however, it becomes purer and more palatable; still, a gallon from the Manhattan Company's well, in Bleecker Street, yielded 80 grains of solid matter, and from the Corporation well in Thirteenth Street, 56 grains. Measures are now in progress to introduce an abundant supply of water from the Croton river, which yields less than *three* grains of solid matter to the

gallon. Most of the hotels and boarding houses, besides many private families, in the lower part of the city, are supplied with water from wells in the upper portion, which is conveyed in hogsheads. As to the influence of impure water upon the health of those who drink it, though doubtless considerable, yet we are inclined to believe it is overrated. As to the vegetable and animal matters held in solution, unless they are in a state of putrefaction, we see not how they can be very deleterious, however unpalatable they make the water in which they are contained. It is highly probable that the mineral substances held in solution are more injurious than the animal or vegetable, as we frequently find persons who have been accustomed to drink waters that are found in a free-stone formation, affected with bowel complaints when they remove to, or visit a lime-stone region, and conversely. Dr. Paris informs us that hard water—that is, water impregnated with sulphate of lime, has a tendency to produce disease in the spleen of certain animals, especially of sheep, and that this is the case on the eastern side of the island of Minorca, as we are told by Dr. Cleghorn. On the contrary, British sailors, who, during long voyages, are entirely confined to the Thames water, which is loaded with animal and vegetable matter, do not seem to suffer in their health, in consequence. Where there is, however, a mixture of animal, vegetable, and saline matters, as is the case in most of the wells in the lower part of this city, the water cannot but exert a very deleterious influence on the health of all who use it.

General Observations on the Tables.—TABLE I. This table exhibits a statement of deaths in New York, for a series of sixteen years, viz. from January 1st, 1819, to January 1st, 1835, inclusive, containing the amount for each year, and from the most prevalent diseases. It also gives the total amount of deaths from each disease, during the whole period. The total amount of deaths for the 16 years, is 83,783; but if we reject the still-born, as never having had a proper existence, (amounting to 4793,) there remains 78,990, averaging 4936 annually. The highest number for any one year, is 10,359, for the year 1832, when 3606 were carried off by epidemic cholera. The next largest number is 9082, for 1834, when 1021 also died by the same disease. The lowest number of deaths in any one year, was in 1819, when they amounted to 3176.

Under the head of acute affections of the lungs, are included catarrh, influenza, pneumonia, peripneumonia, pleurisy, and inflammation of the chest. The number of deaths from all these diseases, amounts to 4696, and from consumption 14,388, making a grand

total of 19,084 during the sixteen years, from pulmonary complaints. In 1834, the number of deaths from affections of the lungs was 2006, being in the ratio of 22·08 per cent. to the deaths from all diseases. In 1819, the deaths under this class were 708, being 22·2 per cent. of the whole number. This has been about the average proportion, though it has varied in different years from 5 to 8 per cent. owing to epidemic and catarrhal influences and other similar causes. In 1833, the deaths from pulmonary complaints were 249 less than the year preceding, owing partly to the fact that large numbers of the weakly and debilitated who were proper subjects for the disease, were carried off the year previous by cholera; and partly to the fact, that the deaths from all other diseases were unusually diminished. This is in accordance with that well known law, that the fatality of diseases is materially lessened for some time after the prevalence of an epidemic. Under the head of fevers, yellow and malignant are included under the bilious and remittent. There have been but 166 deaths from yellow fever in New York for the last 16 years, 165 of these occurring in the autumn of 1822. In 1819, there were 23 deaths from malignant fever, which equals the whole number from this disease for the other 15 years. Under the bilious remittent class there were 1333 deaths, and 1121 not designated. In August, 1820, a malignant fever broke out in Bancker Street, now Madison, which proved extremely fatal to the coloured population residing in that vicinity, of whom, within a short time, 138 died. Although, at that time, they constituted not one-twentieth of the population, yet nearly one-half of all the deaths from fevers during the year, were among the blacks. It is a singular fact, that while there has been a gradual and constant diminution of deaths from other fevers, especially typhus and bilious remittent, which were formerly quite fatal, there has been for several years a constant increase from scarlet fever, amounting within the last six years to 1500. The largest number of deaths from this disease for any one year, was in 1834, when there were 418. In the year 1829, 188 fell victims to it within a few weeks. Until that year, from its commencement in 1817, the average mortality from it was only 7 or 8 per cent. Since that time, its ravages have been truly distressing; in some instances, whole families of children having been swept off by it within a few days. In most cases it assumes a highly malignant and congestive character. In 1834, the deaths from all other fevers, scarlet excepted, were 252, while those from the latter were 418; in 1833, 192 from the former, and 179 from the latter; in 1832, the year of the cholera, 237 from the former and 221 from the latter. In the 6 years, 1828, 29, 30, 31, 32 and 33, in which there

were reported 1103 deaths from scarlet fever, an estimate for all the months gives the following result, commencing with the lowest. In the month of June, from scarlet fever, 53 deaths; May 62, April 66, August 70, September 71, March 74, October 98, February 100, January 117, November 124, December 191; thus showing that its fatality is greatest during the coldest months. Fevers of a purely typhoid character from the beginning, are almost unknown at present in this city. Those denominated nervous and typhus, are generally manufactured or made thus by improper treatment. Occasionally, a fever of a true typhoid type, has prevailed at the Alms-house, and, as during the year 1819, among the poorest class, who suffer from bad food, bad water, and impure air; but, as a general rule, it is believed there is no city in the world, that is less afflicted with fevers of every description, in proportion to its population, than New York. A calculation for the last 16 years will not give over 1 death from fever, anually, to every 600 inhabitants. It is, however, to be regretted, that we have no Fever Hospital in this city, for the reception of cases which cannot be comfortably provided for at their own houses, as it would, doubtless, be the means of saving many lives annually. At present, the only establishments open to the reception of such patients, are the Alms House Hospital at Bellevue, and the City Hospital; the latter of which admitted 132 fever patients in the year 1834. The advantages which an institution devoted exclusively to the management of such cases, would possess over others, are too obvious to need remark. During the whole 16 years, the total amount of deaths from *fevers* amounts to 4151.

The deaths under the head of inflammatory diseases have been the most numerous of any other class, presenting a grand total of 8351; of which 4196 were from inflammation of the thoracic organs. Under inflammation of the brain, 1117 are reported, though there can be no doubt that most if not all of those under teething ought to be ranked under this head. Of inflammation of the chest, the highest number of deaths is 535 in 1834; the lowest 131, in 1819. The fluctuations under this head are very considerable, ranging from 150 to 500. In some years, the mortality among the aged, from the prevalence of epidemic influenza has been extensive; in others, a general catarrhal influence has rendered children peculiarly subject to inflammation of the thoracic organs from exposure to atmospheric vicissitudes. The column embracing inflammation of the stomach, bowels and peritoneum, shows that the ratio of deaths from these diseases has gradually kept pace with the increase of population, ranging from 47, the lowest, in 1819, to 242, the highest, in 1831. The deaths from inflam-

mation of the liver for the whole series amounts to 692, the lowest number for any one year, being 9, in 1829, and the highest 107, in 1830. As a general rule, the mortality from this disease has not increased in proportion to the population. Death from inflammation of the bladder and kidneys is comparatively rare, as there have been but 38 reported under this head for the whole 16 years. Inflammatory affections of the uterus are included under child-bed, and puerperal fever is also embraced under the same. Of erysipelatous inflammation there have been only 168 deaths during the whole period.

Under dropsies, the sum total of deaths is 6160, of which 1890 not being designated, were probably general dropsy. The number from dropsy of the brain is 3639, varying from 119, the lowest in 1819, to 347, the highest in 1834; from dropsy of the chest 640, varying from 24 to 65. Under this head the mortality has steadily kept pace with the march of population.

Under the class of bowel complaints, the whole number of deaths is 10,998; of these 4627 are included under spasmodic cholera, 3606 in the year 1832, and 1021 in 1834. Of common cholera morbus, the highest number of deaths for any one year was 42, in 1819. In 1831, none were reported, and in 1833 only 10. This would seem to show that a year of unusual exemption from this disease is the precursor of a highly fatal one. From diarrhœa and dysentery, the totality of deaths is 6,085, including 2958 of infantile flux or cholera infantum. It is worthy of notice that the greatest number of deaths under these diseases, occurred during the two cholera years, 1832 and 1834, in the former of which there were 568, and in the latter 596; while during the intermediate year, 1833, there were but 142. This fact is not without interest, when considered in connexion with the pathology of cholera.

The column of convulsions presents the very large amount of 5461, being the third class as to fatality. Of these, a large proportion occurred under the age of one year. We have already observed that probably a large number of those ranked under this head, more properly belong under other divisions, such as cholera infantum, inflammation of the brain, &c. The highest number reported for any one year is 770, for 1834; the lowest 168, in 1821.

Of small-pox, there have been 1515 deaths during the whole period. It began its ravages in 1823, the city having been entirely free from it for several years, during which there were 18 deaths, but, in the next, they amounted to the large number of 394. Since its reappearance it has prevailed more or less extensively during the whole period, both summer and winter, the number of deaths ranging from 16 to

about 400 annually. Its victims have generally been from the middle and lowest class, residing in narrow streets and crowded and ill-ventilated apartments. But very few have died, in proportion to the number attacked, and fatal cases have not been wholly, though principally, confined to those not vaccinated. The occurrence of small-pox the second time in the same individual has not been a very unusual occurrence. In most cases, however, it has generally been of a mild character. One principal cause of its extension and prevalence is no doubt owing to the fact, that many persons have the disease so mildly that they are not confined to their houses, but walk the streets with the eruption upon them. We have frequently noticed this, and, in one instance, lately, we saw an individual sitting quite unconcerned in the middle of a bar-room of a public house, with at least 50 good sized variolous pocks on his face, while he had not the least suspicion of having the small-pox. Its prevalence has also been continued by adhering to the once exploded practice of inoculation on the part of some physicians who doubt the efficacy of the kine pock. The prohibition of this practice calls loudly for legislative action. The proportion of deaths from small-pox, for the whole period, has been one in fifty-five, whereas, before the introduction of vaccination, they amounted to nearly one-twelfth of the whole annual mortality. The carelessness, indifference, and incredulity of the poor, especially the foreign class of the population, prevent the benefits of vaccination from being fully enjoyed, and they serve as perpetual focus for the perpetuation and extension of the contagion. The public good imperatively demands that it should be made obligatory on all, under severe penalties, to cause their families to be vaccinated.

Under the head of hives or croup, the number of deaths is 2242, the greatest annual mortality from this disease being 203, in 1831, and the lowest 68, in 1819. This disease has maintained a very uniform degree of prevalence and fatality, fluctuating but very little from year to year.

Under apoplexy, the sums representing the annual mortality, vary from 45 to 147. The whole amount is 1388. Many of those cases reported as sudden deaths from drinking cold water, sun stroke, &c., probably belong under this head. Its fatality is much the greatest during the hot months of summer.

Of measles the deaths are 1,387, ranging from *one* to 290 annually. During the present year this disease has been very fatal in this city, and for the last few years has at times assumed a highly malignant form.

Under the head of drunkenness or intemperance, 1130 only are

recorded: and among these are generally included only those who die during a fit of intoxication, and those belonging to the lowest and most wretched class. If the relatives are respectable, or the deceased was a man of wealth, it is rare to find him included among this class. In such cases he will be more likely to come under "sudden," "casualty," "apoplexy," "nervous," &c., while all diseases which are unquestionably caused by intemperance are ranked under their respective heads: hence we can only arrive at an approximation to the actual number of those who are victims to this cause. There can be no doubt, however, that the use of intoxicating drinks is the most efficient of all causes now in operation for shortening the term of human life.

Under cancer and scirrhus the deaths have been 225, the largest annual number amounting to 24. The fatality from this class is doubtless much increased by the bungling, escharotic treatment of a worthless tribe of cancer doctors, whose success bears an inverse ratio to their promises.

There have been 373 cases of suicide reported for the whole period, averaging about 24 annually, the highest number being 33 in 1834. This is about one to every 9000 inhabitants, nearly the proportion reported in the London bills of mortality. In Copenhagen the deaths from suicide of late years are reported to be in the ratio of one to every 1000 inhabitants; and in Berlin, one to 2700 inhabitants. For about twenty years succeeding 1758, the proportion was one in 1800; and in the ten years following 1787, it was one in 900. It afterwards was trebled, and during the ten years anterior to 1822, it amounted to one in 100. Throughout the whole of Prussia in 1817 the ratio was one in 400 deaths. In Paris the suicides, according to Caspar, are one in 4000 inhabitants, and this does not include those who are found drowned, and whose fate is dubious. From this statement it will appear that our country, and especially this city, is unusually exempt from those causes which in other countries so often lead to self-destruction. When suicides do occur, they generally take place among prostitutes of the most wretched and abandoned character. The number has not increased in proportion to the population.

The deaths from old age during the series is 2324: a lamentable fact, and strongly calculated to repress human pride. When we consider that but one individual in 360 actually dies of old age in New York, we are led to the conclusion that there are powerful causes in operation to shorten human life, and that a large proportion of the population live in the violation of those laws of life, an observance of which is indispensable to the preservation of health and the attainment of longevity. Among these may be reckoned intemperance, both in

eating and drinking; bad air, bad water and bad food; late hours and late rising, inactive habits, insufficient clothing, debauchery and vice, &c. We shall add some further remarks on this subject when we come to consider the comparative mortality of different ages.

From gravel and stone there have been but 56 deaths reported for the sixteen years, which shows an extraordinary exemption from this disease, and would seem to prove that water abounding in lime, as that of this island does, is not the principal cause of calculous disorders.

The column of parturition and childbed gives 554 deaths, which is in the ratio of one death in childbed and from puerperal accidents, including childbed fever, to 123 cases of delivery. The number reported under the head of puerperal fever alone is only 91, which seems to indicate an extraordinary exemption from this disease, and would leave the large number of 463 that have died in parturition. This is a greater mortality than is to be found in Philadelphia and many European cities. Dr. Emerson's tables make the mortality under this head in Philadelphia for twenty years amount to only 90, and during ten years of that period to but 38. The disparity between the deaths under this head in our city, compared with the results in other places, would appear not to indicate a very advanced state of the obstetric art among us; but from the fact that puerperal fever is included in our bills of mortality under parturition, it is very possible that the excess is to be found under the former. If so, this disease is more fatal in New York than in many other cities. What gives much plausibility to this supposition, is the circumstance that considerable fluctuation is observable in the yearly reports of these casualties, the lowest number being nineteen and the highest sixty-eight.

The deaths from tabes or marasmus amount to the large number of 3,084. This disease is extremely fatal among the children of the poorer classes, who are ill-fed and badly clothed, and is no doubt generally owing to irritation occasioned by indigestible articles of food.

The number of still-born has steadily increased from year to year, ranging from 168 to 492 annually. It is impossible, from the manner in which the reports are made, to ascertain how many of these occur at the full period of gestation, and how many in the earlier months of pregnancy; but it is very desirable that such a distinction should be made. According to calculations dedueed from the experience of obstetricians, about one in forty-five births is still-born; this would give for the year 1825, e. g. in which there were 4322 births, 126 for the number of still-born; whereas the number reported is 244. It is therefore highly probable that one half, at least, which are reported under this head are born before the full period of gestation.

There have been but *five* deaths reported from *hydrophobia* during the whole sixteen years, which shows that the extensive dread of mad dogs during the summer months is to a great extent groundless.

TABLE II. This table presents a summary of the deaths in New York for a series of sixteen years, with the number of adults and children designated, the latter embracing all under 20 years. The still-born are included. To arrive as near as possible to an accurate estimate, we should therefore deduct about six per cent. from the sums stated for children. Dr. Emerson states five per cent. to be the average proportion in Philadelphia, for a period of ten years. By adding the numbers for the different months, we obtain the following result for the different seasons.

For March, April, and May,	8881 adults,	8526 children.
For June, July, and August,	11,931	13,875
For September, October, November,	10,783	10,827
For December, January, February,	9,105	9,281
Totals,	40,700	42,509

The months arranged according to the greatest mortality of adults and children, are the following, beginning with the highest, August, July, September, October, December, November, February, January, May, April, June, March. According to the greatest mortality of adults, they range thus: August, July, September, October, December, November, March, May, January, February, April, June, and of children in the following order: August, July, September, October, February, March, January, December, November, April, May, June. The results of this table are, however, very considerably affected by the fact that a disproportionately large number of adults were carried off by cholera in the months of August and September of 1832 and 1834, the months in which the mortality among children is always great. For example, in 1832, 3513 persons died of cholera in July and August, and in the latter month there were 1300 deaths of adults and 906 of children. Deducting, therefore, the deaths for these two years, there remains 4662 deaths of children, and 2938 of adults, for the month of August, which is one adult to 1·5 children. The following table will show at a single glance the ratio of mortality for the whole period, in each month of the series.

January,	deaths of adults, as	1 to 1·03 children.
February,	do.	1 to 1·07
March,	do.	1 to 1·03
April,	deaths of children, as	1 to 1·05 adults.
May,	do.	1 to 1·11

eating and drinking; bad air, bad water and bad food; late hours and late rising, inactive habits, insufficient clothing, debauchery and vice, &c. We shall add some further remarks on this subject when we come to consider the comparative mortality of different ages.

From gravel and stone there have been but 56 deaths reported for the sixteen years, which shows an extraordinary exemption from this disease, and would seem to prove that water abounding in lime, as that of this island does, is not the principal cause of calculous disorders.

The column of parturition and childbed gives 554 deaths, which is in the ratio of one death in childbed and from puerperal accidents, including childbed fever, to 123 cases of delivery. The number reported under the head of puerperal fever alone is only 91, which seems to indicate an extraordinary exemption from this disease, and would leave the large number of 463 that have died in parturition. This is a greater mortality than is to be found in Philadelphia and many European cities. Dr. Emerson's tables make the mortality under this head in Philadelphia for twenty years amount to only 90, and during ten years of that period to but 38. The disparity between the deaths under this head in our city, compared with the results in other places, would appear not to indicate a very advanced state of the obstetric art among us; but from the fact that puerperal fever is included in our bills of mortality under parturition, it is very possible that the excess is to be found under the former. If so, this disease is more fatal in New York than in many other cities. What gives much plausibility to this supposition, is the circumstance that considerable fluctuation is observable in the yearly reports of these casualties, the lowest number being nineteen and the highest sixty-eight.

The deaths from tabes or marasmus amount to the large number of 3,084. This disease is extremely fatal among the children of the poorer classes, who are ill-fed and badly clothed, and is no doubt generally owing to irritation occasioned by indigestible articles of food.

The number of still-born has steadily increased from year to year, ranging from 168 to 492 annually. It is impossible, from the manner in which the reports are made, to ascertain how many of these occur at the full period of gestation, and how many in the earlier months of pregnancy; but it is very desirable that such a distinction should be made. According to calculations dedueed from the experience of obstetricians, about one in forty-five births is still-born; this would give for the year 1825, e. g. in which there were 4322 births, 126 for the number of still-born; whereas the number reported is 244. It is therefore highly probable that one half, at least, which are reported under this head are born before the full period of gestation.

There have been but *five* deaths reported from *hydrophobia* during the whole sixteen years, which shows that the extensive dread of mad dogs during the summer months is to a great extent groundless.

Table II. This table presents a summary of the deaths in New York for a series of sixteen years, with the number of adults and children designated, the latter embracing all under 20 years. The still-born are included. To arrive as near as possible to an accurate estimate, we should therefore deduct about six per cent. from the sums stated for children. Dr. Emerson states five per cent. to be the average proportion in Philadelphia, for a period of ten years. By adding the numbers for the different months, we obtain the following result for the different seasons.

For March, April, and May,	8881 adults,	8526 children.
For June, July, and August,	11,931	13,875
For September, October, November,	10,783	10,827
For December, January, February,	9,105	9,281
Totals,	40,700	42,509

The months arranged according to the greatest mortality of adults and children, are the following, beginning with the highest, August, July, September, October, December, November, February, January, May, April, June, March. According to the greatest mortality of adults, they range thus: August, July, September, October, December, November, March, May, January, February, April, June, and of children in the following order: August, July, September, October, February, March, January, December, November, April, May, June. The results of this table are, however, very considerably affected by the fact that a disproportionately large number of adults were carried off by cholera in the months of August and September of 1832 and 1834, the months in which the mortality among children is always great. For example, in 1832, 3513 persons died of cholera in July and August, and in the latter month there were 1300 deaths of adults and 906 of children. Deducting, therefore, the deaths for these two years, there remains 4662 deaths of children, and 2938 of adults, for the month of August, which is one adult to 1·5 children. The following table will show at a single glance the ratio of mortality for the whole period, in each month of the series.

January,	deaths of adults, as	1 to 1·03 children.
February,	do.	1 to 1·07
March,	do.	1 to 1·03
April,	deaths of children, as	1 to 1·05 adults.
May,	do.	1 to 1·11

June, deaths of children, as	1 to 1·04	
July, deaths of adults, as	1 to 1·37	children.
August, do.	1 to 1·33	
September, do.	1 to 1·08	
October, deaths of children, as	1 to 1·03	adults.
November, do.	1 to 1·06	
December, do.	1 to 1·04	

Out of 23,525 deaths in the city of London in 1829, 9057 or 38·5 per cent. died under five years of age, and 28·52 per cent. under two years. In Paris, during the year 1818, the number of deaths was 22·421, whereof 3942 or 17·58 per cent. were under the age of one year, and 24·86 per cent. died before the expiration of the second. In Philadelphia, during a period of twenty years, the deaths of children under a year old was more than a fifth of the whole number, and from birth to two years, rather less than one-third, or as 1 to 11 of the whole number. The proportion of deaths in New York, under that age, is somewhat greater. A large proportion of deaths among children, during the warm season, is caused by cholera infantum or tabes mesenterica, which is perhaps but a modification of the same disease. That this is mainly produced by a vitiated atmosphere, is evident from the fact, that children rapidly recover from it when removed into the country. It is deeply to be regretted that there are no laws to prevent the undue crowding of population, which is doubtless one of the most influential causes of the disproportionate mortality of cities. It is not an unusual thing for 60 or 70 individuals to occupy a small two story house, filling every room from cellar to attic, and probably a still larger number in many; and while our municipal authorities strictly guard the construction of houses, so as to protect them against conflagration, the preservation of life and health, by preventing them from being turned into manufactories of pestilence by too dense a population, seems to be considered as a matter of very little consequence.

Table III. This table exhibits the ages or periods of life at which the deaths in New York have occurred in each year, for sixteen years. The result gives:—

Under one year,	25·4	per cent. of the whole number.
Between 1 and 2,	9·4	do.
Do. 2 and 5,	8·1	do.
Do. 5 and 10,	3·8	do.
Do. 10 and 20,	4·2	do.
Do. 20 and 30,	12·6	do.

Do. 30 and 40, 11·6 per cent. of the whole number.
Do. 40 and 50, 5·8 do.
Do. 50 and 60, 5 do.
Do. 60 and 70, 4 do.
Do. 70 and 80, 2·5 do.
Do. 80 and 90, 1·1 do.
Do. 90 and 100 ¼ of 1 per cent.

More than one half the deaths occur under the age of 20, or 50·1 per cent., including the still-born; excluding these, and they amount to 46·8 per cent. Deducting the still-born from those reported under one year, and there then remains 22·1 per cent. as the deaths during that period. In Philadelphia they are, during the same period, 22·7, and in Baltimore 24·11 per cent. Out of 83,783 the small number of 43 went over the age of 100, and 269 over that of 90.

Table IV., exhibits a statement of the mortality in New York, from the most frequent diseases, for 16 years; showing the proportion of deaths from each particular disease to the whole number of deaths, and also the proportion from diseases of a similar class to the whole number. The whole number of deaths in New York, from January 1st, 1819, to January 1st, 1835, is 83,783.

Table V. This shows the deaths of adults and children, males and females, for each year of the series. In the comparative estimate for 16 years, of the mortality of all ages, that of females is 20 per cent. less than that of the males, being in the ratio of 80 females to 100 males. Under the 20th year, the excess of males is 18 per cent. being at the rate of 82 females to 100 males. Of the whole mortality of adults, the excess of males amounts to 24 per cent., being in the ratio of 76 females to 100 males. In England, the proportion of deaths of women to that of men has been calculated to be as 92 to 100, which shows that the chances for life are more favourable to the female sex in this city than in that country.

Table VI. Presents an estimate of the proportion of deaths to the population. The census of 1820, 1825, 1830, and 1835, has served as a basis for estimating the population of the intermediate years, on the supposition that the increase has been regularly progressive. The population of New York, in 1820, was 123,706; in 1825, 166,086; in 1830, 207,021, and in 1835, 269,879. The smallest number of deaths was in 1822, when there was but one to 43·8 inhabitants; the greatest in 1832, when there was one in every 22·4. The average proportion for sixteen years is 1 death in every 36 inhabitants. When we take into consideration the greater mortality among the blacks

than the whites, we shall find the average proportion for the whites considerably increased. Making this deduction for the city of Philadelphia the average mortality for 14 years among the whites is only 1 in 50·8, while that of the blacks is as 1 in 19, and the average proportion for both, according to Dr. Emerson, is but 1 in 47·86, which is 11·86 per cent. in favour of Philadelphia over New York. The lowest mortality among the blacks in New York, for seven years, was in 1833; when the deaths were only 1 to every 26·1 inhabitants; the greatest in 1826, when it was 1 in every 17·2; the average mortality among the blacks is 1 in 21·3 inhabitants. In 1826, the proportion of deaths among the whites to the white population, was 1 in 41·2; in 1828, 1 in 41.8; in 1829, 1 in 43·9; in 1830, 1 in 42·1; in 1831, 1 in 38·5; in 1833, 1 in 42·9, and in 1834, 1 in 31·1. The average proportion for the whole period, is 1 in 40·15.

Of the whole amount of deaths reported for the seven years above mentioned, that of the blacks was 9·1 per cent. In 1825, they constituted 13·2 per cent. of the population; in 1835, 17 per cent., so that they have increased in the ratio of 4 per cent. upon the whites.

Tables VII. and VIII. These tables are abstracts of the census of the city of New York for the years 1825, 30, and 35, containing the number and description of the inhabitants of the several wards from which reports of interments are made, together with some other items of statistical information. The first thing which appears worthy of particular notice, is the difference in the ratio of males and females in the years 1825 and 1835. In the former year, the number of male inhabitants was 83,037, and of females 83,049, there being but a difference of twelve. In 1835, the number of males was found to be 131,522, while the female population amounted to 138,357, the females exceeding the males by 6835. That this is not occasioned by disparity of births, is evident from the fact, that during the first period, the difference between the male and female births was only five; and during the latter, 101 in favour of the males. Some have attempted to account for this by attributing the greater mortality among the males to the greater risks of life encountered by them in their various pursuits and occupations; but when we consider that there are also peculiar causes operating in cities to shorten female life, sufficient, perhaps, to counterbalance the former, we cannot admit this explanation to be perfectly satisfactory. A more rational solution is to be found in the fact, that a larger number of males are employed at sea and in the construction of rail-roads, canals, &c. at a distance from their families. In 1835, the number of males under five years exceeded that of females by 379; between 5 and 10, the females exceeded the

males by 307; thus showing very clearly that the number of deaths among male children under ten years, exceeds that of the females.* Between the ages of 10 and 15, the females exceed the males by 1146; and between 15 and 20, 1638, while between 20 and 35 the number is reduced to 1142; and during the next 10 years, viz. from 30 to 40, the males exceed the females by 743. It is evident, therefore, that the mortality among the females in New York, between the ages of 20 and 40, is much greater than that of males during the same period; one cause of which may probably be found in the abandoned and dissolute habits of a large class devoted to a life of prostitution. If we carry the comparison still farther, we find that between 50 and 60, the number of females again exceeds that of the males by 395, and predominates through the other remaining periods. There are, then, three distinct fluctuations. From birth to the age of five or six, the number of males exceeds that of the females; from that to 20, the females predominate; from this to 40, the number of males increases until it surpasses the number of females, and from 45, the close of life, the females are again in the ascendancy. During the latter periods of life, the females exceed the males by 121 per cent.

Of the blacks, the relative proportion of females to that of males, is 100 of the latter to 133 of the former, reckoning all ages, or as 100 females to 67 males. The following calculation obtained from the census of 1830, gives a comparative view of the proportion of sexes at the different periods of life.

WHITES.

Under 5,	100 males to	97·2 females.
From 5 to 10,	100	to 102·9
10 to 15,	100	to 113·3
15 to 20,	100	to 116·5
20 to 30,	100	to 105·3
30 to 40,	100	to 94·5
40 to 50,	100	to 101·1
50 to 60,	100	to 115·5
60 to 70,	100	to 122·1
70 to 80,	100	to 126·
80 to 90,	100	to 22·14

*Dr. Emerson has noticed the same fact in the 33d number of the American Journal of the Medical Sciences. He shows, that, notwithstanding the males at birth exceed the females about 7½ per cent. in Philadelphia, by the 5th year of childhood the male excess is reduced to about 5 per cent.. and at 10 years to 1 per cent., and that the females between the ages of 10 and 15, exceed the males about 8 per cent., and between 15 and 20, 7 3 per cent.

BLACKS.

From 10 to 20, 100 males to 157 females.
20 to 36, 100 to 140·7
36 to 55, 100 to 120·0
55 to 100, 100 to 121·0

According to the census of 1830, the number of male whites of the age of 30 years and under, was 63,986; over that age, 25,507, being in the proportion of 100 of and under 30 years, to 39 above that age. The number of females of 30 years and under, was 67,939; over that age, 25,987, being in the ratio of 100 of the age of 30 and under, to 38 above that age; or, taking the whole number of males and females, the proportion of inhabitants under the age of 30, is to that above, as 100 to 39·5. The whole number of the age of 50 and over, bears to the number under that age, the proportion of 11·8 to 100. As the practitioners of midwifery are not required to report the births in New York, as in Philadelphia, the only way of arriving at the result, is to take the returns of the census, which is taken every five years. The number of deaths, however, obtained in this way, is considerably less than that furnished by the Report of the City Inspector, the difference being about 34 per cent. If the returns of births are as incomplete as those of the deaths, 34 per cent. should be added to the following calculations, to make them correct. But the fact, doubtless, is, that they are not as imperfect, owing to the circumstance that still-born children are not included in the census, but are in the reports of the Inspector.

Year.	Population.	Births.	Deaths.	Excess of Deaths.
1825	166,086	4529	5018	489 ,,
1826	174,273	4811	4973	162 ,,
1827	182,460	5094	5181	87 ,,
1828	190,647	5377	5181	196 excess of births.
1829	198,834	5660	5094	566 ,,
1830	207,021	5943	5537	306 ,,
1831	219,592	6226	6363	137 excess of deaths.
1832	232,163	6509	10,359	3850 ,,
1833	244,734	6792	5746	46 ,,
1834	257,305	7075	9082	2006 ,,
1835	269,879	8951		

Total number of births for 10 years	57,917
Do. deaths do.	62,534
Excess of deaths	4617
Deduct still-born	3514
Excess of deaths	1103

The number of paupers in 1825 was 2055, and in 1835 but 1893, which shows that the facilities for obtaining a subsistence have been increased, or that the municipal authorities are more sparing of their bounty. The coloured population in 1821, was 10,730, and in 1835, 15,102, having increased only 4372 in 14 years, which is at the rate of 312 per year. The fact that only 79 persons of colour are taxed, shows conclusively the generally impoverished condition of that race. Indeed, a striking feature in the population of New York, as well as all our principal cities, is the degraded and wretched state of the blacks, not one-tenth, according to the best calculations, have any regular employment, but depend on transient jobs, stealing, begging, and public charity for support. During the year 1829, 219 coloured children were committed to the Penitentiary as criminals. A building is now being erected adjoining the House of Refuge for the reception of coloured vagrants, under the same regulations and management as that Institution, which will doubtless be the means of rescuing many from vicious and thieving courses.

The increase of blacks is about 2 per cent. less than that of whites.

Tables IX. and X. These tables exhibit the ratio of the deaths of blacks to the black population, and the excess of deaths over the whites; also, the comparative mortality of whites and blacks by consumption. The average excess for a series of 10 years, of deaths of blacks over whites, is 18·60 per cent. By consumption, the deaths among blacks are about double the same among the whites, in proportion to population. The highest number among the whites, was in 1834, when it was 1 in 197 inhabitants; while among the blacks it was one in 83. The lowest among blacks was 1 in 152, in 1823; among whites 1 in 250 in 1824. This is consonant with the well-known fact, that the blacks are peculiarly subject to pulmonary affections in northern latitudes.

Table XI. This table, for which I am indebted to a calculation by Drs. Niles and Russ,* gives an interesting view of the influence of season upon different diseases. Consumptions, dropsies, diseases of the liver, and palsy, being chronic forms of disease, are not much affected by the influence of season, while its influence is particularly shown in all acute diseases.

* New York Medical and Physical Journal, Vol. VI. p. 304. (1827.)

TABLE I.

Statement of Deaths in New York, for a series of sixteen years, viz:—from January 1, 1819, to January 1, 1835, inclusive; containing the amount for each year, and the number which occurred from the most prevailing Diseases.

| Year. | *Diseases of Lungs.* | | | | *Fevers.* | | | | | *Inflammations.* | | | | | *Dropsies.* | | | | *Bowel Complaints.* | | | | |

TABLE II.

Summary of the Deaths in New York for each month, in a series of sixteen years, with the number of Adults and Children, including still-born, according to the Annual Reports of the Board of Health.

Year.	January.			February.			March.			April.			May.			June.			July.			August.			September.			October.			November.			December.		
	Adults.	Children.	Total.	Adults.	Children.	Total.	Adults.	Children.	Total.	Adults.	Children.	Total.	Adults.	Children.	Total.	Adults.	Children.	Total.	Adults.	Children.	Total.	Adults.	Children.	Total.	Adults.	Children.	Total.	Adults.	Children.	Total.	Adults.	Children.	Total.	Adults.	Children.	Total.
1819	146	114	260	114	109	223	127	82	209	127	99	226	125	71	196	113	94	207	121	140	261	164	296	460	140	219	359	149	160	309	165	101	266	127	93	220
1820	130	109	239	97	90	187	88	109	197	127	84	211	111	103	219	117	87	204	139	235	374	193	310	503	195	244	439	179	163	342	190	132	322	165	118	283
1821	158	129	287	112	137	249	141	164	304	151	120	271	146	111	257	130	93	223	163	168	331	192	264	456	162	198	360	171	152	323	125	97	222	159	90	299
1822	144	117	261	107	124	231	127	152	279	137	109	246	133	101	234	118	84	202	148	153	301	175	249	424	91	174	265	155	138	293	114	88	202	147	82	229
1823	153	84	237	122	102	224	131	120	251	146	107	253	143	92	235	105	100	205	139	243	382	181	264	445	173	188	361	157	173	330	134	112	246	157	118	275
1824	176	169	345	173	190	363	192	193	385	213	198	411	191	162	353	155	163	318	154	203	357	168	278	446	158	194	352	204	181	385	194	146	340	153	133	286
1825	196	121	317	287	153	440	228	134	362	194	111	305	262	143	405	245	174	419	435	298	733	233	279	502	188	219	407	206	160	366	219	157	376	208	168	376
1826	192	149	341	278	177	455	190	1 9	359	181	141	322	206	159	365	165	146	311	196	277	473	217	337	554	217	280	497	255	237	492	180	204	384	199	221	420
1827	189	231	420	170	236	406	217	203	420	203	194	397	216	140	356	161	179	340	237	339	576	240	367	607	193	233	426	245	195	440	222	170	392	234	167	401
1828	206	185	391	222	198	420	255	212	467	204	146	350	196	145	341	204	161	365	205	298	503	216	366	582	244	272	516	255	209	464	214	188	402	198	182	380
1829	206	215	421	192	218	410	208	212	42	172	184	356	207	176	383	165	172	337	189	282	471	231	366	597	239	284	523	203	231	434	165	196	361	167	214	381
1830	216	298	514	195	189	384	191	195	386	178	190	368	191	248	439	175	209	384	247	417	664	234	433	667	224	276	500	205	244	449	195	226	421	205	246	451
1831	185	222	407	209	208	417	252	246	498	183	204	387	182	186	368	229	254	483	167	345	512	286	505	891	254	350	604	237	290	527	321	334	655	367	327	694
1832	233	331	564	276	459	735	234	311	545	220	258	478	231	284	515	196	214	410	1856	611	2467	1300	906	2206	647	417	1064	343	243	586	197	203	400	161	228	389
1833	223	280	503	199	216	415	196	224	420	196	209	315	213	228	441	156	174	330	273	374	647	208	348	556	214	321	535	261	277	538	199	248	447	215	294	509
1834	228	335	563	206	361	627	245	375	620	229	361	590	255	351	194	294	304	598	331	526	857	666	790	1456	736	578	1314	300	369	669	329	366	695	303	344	647
	2981	3089	5060	2959	3167	6126	3011	3111	5122	2861	2715	5576	3009	2700	5709	2728	2608	5336	4299	1909	9208	1904	6358	1162	4075	4437	8512	3544	3422	6966	3164	2968	6132	3165	3025	6190

TABLE III.

The Ages or Periods of Life at which the Deaths in New York have occurred in each year of a series of sixteen years.

Years.	Under 1 year.	Between 1 and 2.	Between 2 and 5.	Between 5 and 10.	Between 10 and 20.	Between 20 and 30.	Between 30 and 40.	Between 40 and 50.	Between 50 and 60.	Between 60 and 70.	Between 70 and 80.	Between 80 and 90.	Between 90 and 100.	Between 100 and 110.	Between 110 and 120.	Whole number of deaths per annum.*	Average mean duration of life per year.
1819	847	306	188	103	157	390	383	316	200	135	93	45	10	3	0	3176	
1820	867	361	254	125	176	418	409	359	224	156	101	46	17	2	0	3515	
1821	825	369	261	122	158	445	446	346	243	175	79	57	11	1	0	3542	
1822	793	264	219	101	150	427	421	333	203	156	93	54	10	2	0	3231	
1823	899	315	230	117	153	453	411	345	232	135	109	49	14	2	0	3444	
1824	1072	397	389	164	190	559	544	425	258	159	115	56	11	2	0	4341	
1825	1109	386	300	137	181	653	758	641	357	226	161	88	14	7	0	5018	
1826	1232	476	350	180	253	618	628	483	330	202	132	71	15	3	0	4973	
1827	1336	546	389	185	192	682	657	501	285	221	124	50	12	1	0	5181	
1828	1427	460	339	149	193	685	729	496	302	214	115	57	13	2	0	5181	
1829	1390	496	465	214	198	604	606	438	298	204	124	57	18	2	0	5094	
1830	1547	575	517	207	235	676	672	427	289	206	129	44	9	4	0	5537	
1831	1757	663	592	265	255	700	735	519	343	235	207	74	14	4	0	6363	
1832	1922	830	965	450	433	1397	1617	1142	705	489	273	109	25	2	0	10,359	
1833	1724	552	468	232	262	701	691	448	258	211	118	61	15	5	0	5746	
1834	2603	900	861	381	372	1168	1102	718	425	282	178	73	17	2	0	9082	
	21,330	7866	6787	3232	3548	10,576	9809	7939	4912	3306	2151	991	225	44	0	83,783	

*This column includes, also, those where the age of the deceased was not reported.

TABLE IV.

Statement of the mortality in New York, from the most frequent diseases, for sixteen years, showing the proportion of Deaths from each particular disease to the whole number of Deaths.

Class.	Names of Diseases.	Total Deaths.	To the whole number of Deaths as 1 in	Whole number of Deaths by diseases of a similar Class.	Proportion of Deaths from Diseases of a similar Class to the whole number of Deaths, as 1 in
	Consumption,	14,388	5·8		
Bowel Complaints,	Cholera, spasmodic,	4484	18·6		
	Dysentery and Diarrhœa,	3127	26·7	10,569	7·9
	Flux, infantile,	2958	28·3		
	Puerperal,	91	920·		
Fevers,	Scarlet,	1578	53·	4892	17·1
	Typhus,	1694	49·		
	Remittent,	1529	54·8		
	Lungs and Chest,	4196	19·9		
	Stomach and Bowels,	2049	40·2		
	Brain,	1117	75·		
Inflammations,	Liver,	692	121·	8351	10·
	Uterus and Peritoneum,	91	920·		
	Kidnies and Bladder,	38	22·04		
	Erysipelatous,	168	49·8		
	Convulsions,	5461	15·3		
	Not designated,	1890	44·3		
Dropsies,	Brain,	3639	22·7	6069	13·
	Chest,	640	130·		
	Old Age,	2324	36·		
	Small-pox,	1515	55·3		
	Croup,	2242	37·3		
	Hooping Cough,	1400	64·4		
	Apoplexy,	1388	60·3		
	Measles,	1387	60·4		
	Tabes and Marasmus,	3084	27·1		
	Cancer and Scirrhus,	225	372·		
	Asthma,	183	460·4		
	Epilepsy,	144	581·		
	Syphilis,	135	620·		
	Tetanus,	112	748·		
	Suicide,	373	224·		
	Childbed,	554	151·		
	Spine,	439	190·		
	Hydrophobia,	5			
	Worms,	389	215·		
	Unknown,	1448	57·		

TABLE V.

Statement of the Deaths of Adults and Children, Males and Females, for each of the following sixteen years.

Year.	Deaths.						Number of Deaths per annum.
	Male Adults.	Male Children.	Whole number of Males.	Female Adults.	Female Children.	Whole number of Females.	
1819	895	851	1746	703	727	1430	3176
1820	947	979	1926	784	805	1589	3515
1821	974	892	1866	835	841	1676	3542
1822	914	837	1751	783	789	1572	3231
1823	1007	955	1962	734	748	1482	3444
1824	1244	1204	2448	887	1006	1893	4341
1825	1721	1156	2877	1180	961	2141	5018
1826	1473	1334	2807	1003	1163	2166	4973
1827	1536	1457	2993	991	1197	2188	5181
1828	1574	1447	3021	1045	1115	2160	5181
1129	1333	1584	2917	1011	1166	2177	5094
1830	1390	1640	3030	1066	1441	2507	5537
1831	1577	1929	3506	1295	1562	2857	6363
1832	3200	2463	5663	2694	2002	4696	10,359
1833	1364	1773	3137	1189	1420	2609	5746
1834	2234	2765	4999	1790	2295	4085	9082
	23,382	23,266	46,649	17,989	19,238	37,328	83,783

TABLE VI.

An estimate of the proportion of Deaths in the City of New York, to the population for each year of a series of sixteen years, together with the average number for the whole period.

Year.	Whole number of deaths.	Population.	Proportion of deaths to population.
1819	3176	115,210	36·
1820	3515	123,706	35·1
1821	3442	132,200	38·4
1822	3231	140,696	43·8
1823	3444	149,110	42·2
1824	4341	157,606	36·3
1825	5018	166,086	33·
1826	4973	174,273	35·
1827	5181	182,460	35·2
1828	5181	190,647	36·5
1829	5094	198,834	39·
1830	5537	207,021	37·4
1831	6363	219,592	34·5
1832	10,359	232,163	22·4
1833	5746	244,734	42·6
1834	9082	257,305	28·3

Average proportion of deaths to population, as 1 in - - - $\frac{16 \mid 576}{36}$

TABLE VII.

Abstract of the Census of 1825 *and* 1835 *of the City of New York, containing several items not included in the other Table.*

Years.	Number of Males.	Number of Females.	Number of Males subject to Military Duty.*	Whole number of Males entitled to vote.	Male persons not naturalized, (aliens.)	Number of Paupers.	Persons of Colour not taxed.	Persons of Colour taxed.	Number of Coloured Persons taxed, and entitled to vote.	Married Females under the age of 45.	Unmarried Females between 16 and 45.	Females unmarried, under 16.	Number of Marriages during the year preceding.	Male Births in the year preceding.	Female Births in the year preceding.	Death of Males in the year preceding.	Death of Females in the year preceding.	Acres of improved land.	Number of Neat Cattle.	Number of Horses.	Number of Sheep.	Number of Hogs.	Yards of Cloth manufactured in domestic way.
1825	83,043	83,049	14,956	18,283	18,826	2055	12,499	60	16	22,430	21,049	30,445	810	2262	2267	2055	1184	5785	3569	5634	175	7140	1,164,230
1835	†131,522	138,357	22,910	42,936	27,538	1893	14,948	79	75	39,927	35,716	46,464	1991	4526	4425	3273	2657	4476	4062	10,713	416	11,879	668,500

*Between 18 and 45.

†269,379 Total.

TABLE VIII.

Abstract from the Census of the City of New York, taken in 1830, showing the number and description of inhabitants in all the wards from which Reports of Interments are made.

WHITE POPULATION.

Year.	*Males.* Under 5 years.	From 5 to 10.	From 10 to 15.	From 15 to 20.	From 20 to 30.	From 30 to 40.	From 40 to 50.	From 50 to 60.	From 60 to 70.	From 70 to 80.	From 80 to 90.	From 90 to 100.	100 and upwards.	*Females.* Under 5 years.	From 5 to 10.	From 10 to 15.	From 15 to 20.	From 20 to 30.	From 30 to 40.	From 40 to 50.	From 50 to 60.	From 60 to 70.	From 70 to 80.	From 80 to 90.	From 90 to 100.	100 and upwards.
1830	13,644	10,357	8656	9918	21,409	13,657	6625	3207	1468	449	80	14	7	13,265	10,665	9802	11,556	22,551	12,916	6699	3702	1793	666	178	31	2

COLOURED POPULATION.

Year.	*Males.* Under 10 years.	From 10 to 20.	From 20 to 36.	From 36 to 55.	From 55 to 100.	100 and upwards.	*Females.* Under 109 years.	From 10 to 20.	From 20 to 36.	From 36 to 55.	From 55 to 100.	100 and upwards.	Total.	Total persons classed.	Not classed.
1830	1261	1358	1774	1269	371	5	1431	2135	2495	1530	449	5	14,091	197,432	5525

Total population in 1830, · 202,957

14,091 coloured.

188,866 whites.

TABLE IX.

Exhibiting the ratio of deaths of blacks to the black population, and the excess of deaths over whites.

Year.	Black Population.	Deaths of Blacks.	Per cent. of Deaths.	Excess of Deaths over that of Whites.
1821	10,730	550	19·50	
1822				
1823	11,600	432	26·85	
1824	12.070	718	16·81	
1825	12,575	875	14·35	
1826	12,878	745	17·2	24 per cent.
1827	13,181			
1828	13,484	630	21·4	20·4
1829	13,787	566	24·3	19·6
1830	14,091	625	22·5	19·6
1831	14,292	670	21·3	17·2
1832	14,494			
1833	14,696	561	26·1	16·8
1834	14,898	817	18·2	12·9

Average excess over deaths of whites, 18·60 per cent.

TABLE X.

Showing the comparative mortality of whites and blacks by consumption.

Year.	Deaths of Blacks by Consumption.	Death of Whites by Consumption.	Total Deaths to White Population, as 1 in	Total Deaths to Black Population, as 1 in
1823	76	607	245	152
1824	107	629	250	112
1825				
1826	117	703	247	110
1828	99	807	237	137
1830	168	806	256	83
1832	126	907	205	115
1834	178	1293	197	83

TABLE XI.

DISEASES.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Consumption, - -	660	659	644	664	616	510	591	663	579	585	645	650	7466
Acute disease of Lungs,	200	292	254	230	210	114	117	105	92	141	152	172	2069
Fevers, - - -	178	137	158	186	211	245	262	374	497	441	305	211	3205
Dropsies, - - -	244	257	241	245	259	242	272	308	269	259	210	245	3044
Dysentery, - - -	22	14	29	7	16	28	233	489	378	203	79	36	1544
Cholera Infantum, -	2	2	2	1	5	32	246	527	288	108	14	18	1245
Croup, - - - -	137	106	122	106	91	66	69	67	84	140	139	122	1239
Tabes Mesenterica, -	68	66	85	95	79	69	80	126	139	135	89	84	1115
Gastro Enteritis, - -	48	54	56	60	60	76	121	97	94	69	67	59	861
Hooping Cough, - -	53	66	42	33	37	31	73	105	105	71	56	49	721
Apoplexy, - - -	49	59	56	47	57	45	109	59	45	59	55	57	697
Measles, - - -	48	42	46	45	32	44	65	77	45	39	24	45	552
Intemperance, - -	49	32	33	31	49	47	46	43	44	47	63	47	531
Disease of Liver, - -	48	46	34	35	34	39	57	44	36	64	41	50	528
Palsy, - - - -	42	42	44	31	28	28	31	38	25	41	39	44	428

ART. III. *An account of seven additional Cases of Stone in the Bladder, in which the operation of Lithotripsy was successfully performed.* By J. RANDOLPH, M. D., Lecturer on Surgery, one of the Surgeons to the Pennsylvania Hospital, and to the Philadelphia Blockley Hospital, &c.

In the September number of this Journal, for the year 1834, I reported six cases of stone in the bladder, in which I had successfully performed the operation of Lithotripsy; these were the first cases of stone to which this operation had ever been successfully applied in America. It is due, however, to Dr. Depeyre, formerly of New York, to state, that he was the first surgeon who performed the operation of lithotrity with complete success in this country. One case is reported by him in the New York Medical Journal for February, 1831, in which he performed the operation by Civiale's method.

In the report of my first cases, made two years since, I distinctly stated that there were three methods of performing lithotripsy, employed by European surgeons, and that the successful results of their operations had established in the fullest manner the practicability of these several methods. Cases may undeniably occur in which each of these methods will be found to possess its own peculiar advantages, and it

has also been proved, in the most satisfactory manner, that in some instances a combination of them may be employed with the most salutary results.

It may be considered a matter of some surprise, that the surgeons of this country should have been so tardy in resorting to the operation of lithotripsy. This hesitancy, however, we know to be the natural and invariable attendant upon the adoption of every new and important discovery. For myself, I do not deny that I derive great gratification from believing that I have been, in a measure, instrumental in establishing the method in this country, and that, too, at a period when, by some surgeons, it was most loudly decried. Respecting the final success of the operation, I never entertained a doubt. I was well aware, and whenever appealed to upon this subject, uniformly predicted that the time would soon arrive when those who had been most opposed to lithotripsy would eagerly resort to it. It will be seen by my first report that at this period I placed great dependence upon the instruments and method of operating used by M. Civiale, although in each of the cases there reported, I employed, in conjunction with his lithotripteur, the brise-pierre articulè of M. Jacobson. I still consider Civiale's operation admirably adapted to the relief of stone in the bladder; further experience, however, has instructed us, that in most cases the complaint may be removed by the agency of instruments less complicated, and by a process less protracted. My excellent friend, Dr. Edward Peace, who has lately returned from Paris, informs me that Civiale continues to perform his operation with the most perfect success; he, however, freely admits that the operation of lithotripsy possesses advantages over his own, and does not hesitate to resort to it upon suitable occasions.

It seems quite superfluous to make any remarks in commendation of Baron Heurteloup's methods of performing lithotripsy by means of his excellent instrument, the "percuteur courbe a marteau," or of its various modifications, since resorted to. I stated, in my first report, that this was an instrument admirably adapted to the removal of calculus from the bladder. Baron Heurteloup's experience in the use of this instrument, even at that period, was sufficient, of itself, to warrant this assertion; his operations were attended with such complete success, that out of thirty-eight cases of stone, he succeeded in effecting a cure of thirty-seven. Since then, he has been most extensively engaged in the performance of this operation, and, as no one denies that he has acquired a most extraordinary and enviable degree of skill and dexterity in the management of his instruments, doubtless, we may soon expect a brilliant report of successful cases from

him. We have seen, with great pleasure, in the preceding number of this Journal, a report of several cases, in which a modification of Heurteloup's instrument has been used by Dr. William Gibson. My own operations having been principally performed by means of the brise-pierre-articulè of M. Jacobson, I may be excused for offering a few remarks concerning this instrument, and for stating my reasons for recommending it. I have now employed the brise-pierre-articulè, either alone or in combination with other instruments, in thirteen cases of stone in the bladder, and in all of them with the most flattering success. This instrument, so far as we know, has not been used more extensively by any one surgeon even in Europe. Soon after making trial of the brise-pierre, an instrument combining within itself immense power of action, together with remarkable delicacy of form and structure, fitting it in a peculiar and happy manner for the purposes desired, I became impressed so favourably with its extraordinary efficacy, as to induce me to pronounce it one of the most useful and important instruments ever invented for surgical purposes. I have not the vanity to suppose that this expression of my sentiments respecting the instrument will have the effect of enhancing its value in any great degree, even in the estimation of its distinguished inventor. Should this paper, however, happen to come under the observation of M. Jacobson, he will probably be gratified to know that Dr. Physick, than whom no one is more capable of judging of the value of an instrument, after carefully studying its structure and witnessing its successful application, declared, that in his opinion, "a statue should be erected in honour of its inventor." I would recommend, however, to every surgeon who engages in the performance of the operation of lithotripsy, to be provided with all the instruments which we have spoken of for this purpose.

The following are my reasons for employing the brise-pierre-articulè. 1st. The power which it possesses is sufficiently great to break the hardest variety of stone we meet with; this position I shall fully prove by my thirteenth case; 2nd. It can be introduced into the bladder with greater facility than any other instrument, and causes the patient less pain during the operation; 3d. It can grasp in the bladder as large a stone as any other instrument; 4th. By simply turning its point downwards, it can be made to descend behind the prostate and reach every part of the bladder; 5th. It is all sufficient to search out and take up fragments; 6th. Its construction is such, that it is less liable to pinch the bladder than any other instrument; 7th. It possesses so much strength, it would be almost impossible to break it; 8th. Its loop can be always freed from the sand and small fragments,

so as to occasion no inconvenience or pain to the patient, in withdrawing the instrument; 9th. The regularity of the loop is so perfect that it is extremely well adapted to fix the stone securely, and hold it entirely steady. 10th. The brise-pierre being opened in the bladder, in case this organ contracts forcibly, as it sometimes does, its coats cannot get insinuated within its grasp, as might happen either to Civiale's or Heurteloup's instruments.

I shall now proceed to detail the cases.

Case VII. Mr. David Hayes, of Newark, New Jersey, aged 70 years, arrived in this city the latter end of September, 1834, labouring under symptoms of stone in the bladder, and applied to me for relief. I permitted Mr. Hayes to remain quiet for a few days, in order to recover from the fatigue caused by his journey, and then introduced a sound into his bladder, and ascertained the existence of the calculus. It was evidently of small size. I discovered from this examination that his urethra was in a healthy condition, and sufficiently large to admit a sound of full size to pass readily into the bladder. The bladder also appeared to be sound, and he could retain his urine for a period of two or three hours. On the 7th of October, 1834, I introduced into his bladder the brise-pierre-articulè of M. Jacobson, in the presence of Dr. Physick and Messrs. Kennedy and Herrn. I caught the stone immediately, without the least difficulty, and succeeded in crushing it three several times. The patient appeared to suffer but little pain from this operation, which occupied about five minutes; I could have continued it readily for a longer period, but thought best to desist in order to ascertain what degree of irritation it would excite, and how he would bear it. Upon withdrawing the instrument, it brought out a quantity of calculous matter, which was soft, and seemed to consist principally of phosphate of lime. This operation did not cause the least irritation or fever, and for several days subsequently small fragments of stone were discharged with the urine.

October 12th. I again introduced the instrument and caught the stone, and crushed it four times; upon withdrawing the instrument its blades were filled with a quantity of the same calculous matter. A few hours after this operation, Mr. Hayes voided a considerable quantity of fragments; and although he did not complain at all of pain during the operation, he had a chill three or four hours after it, which was followed by some fever. I now prescribed for him a mild cathartic, and at bedtime he took a Dover's powder, which produced a profuse perspiration, and his fever passed off entirely during the night. The patient continued to discharge sand and fragments of stone for several

days subsequently to this operation, and then expressed himself almost entirely relieved of the painful symptoms he had formerly endured. Upon sounding him, however, very carefully, I discovered several small fragments remaining, and on the 24th inst. I again introduced the brise-pierre, and seized those particles and crushed them, without his making the least complaint. This operation was followed by the same discharge of fragments as the former ones, and in the course of a few days he appeared to pass out all that remained in the bladder. He now felt so much relieved that he was anxious to return home for a short time, and accordingly he left Philadelphia on the 29th of October, and I did not see him again until the 15th of December. The next day I sounded him and detected one small fragment. I immediately introduced the instrument into his bladder, and destroyed it at one operation; in the course of a few hours he voided it entirely. From this period he could hold his urine all night, and did not experience the slightest pain or difficulty in passing it out. I now sounded him several times in the most careful manner, but could not detect the least particle of stone remaining in the bladder. Mr. Hayes returned home the latter end of the month in fine spirits.

Case VIII.—November 13th, 1834, I commenced the operation of lithotripsy on Captain Henry Lelar, of this city, aged 60 years. Captain Lelar had been afflicted with the stone for several years, and had suffered in consequence of it most severely. About twelve months prior to this period he had determined to submit to lithotripsy, and I was preparing him for the operation. He, however, was persuaded by some of his friends, greatly to his subsequent regret, to abandon this method, and to undergo the operation of lithotomy. This operation was skilfully performed; the stone, however, was so soft, that in its extraction it broke into innumerable fragments. After some time the incisions healed, but the captain was not relieved of his painful symptoms, and some months subsequently it was discovered that he had another calculus in his bladder.

Captain Lelar being unwilling to submit a second time to the operation of lithotomy, his surgeon now had the kindness to place him under my care, in order that he might undergo lithotripsy. On the date mentioned I introduced the brise-pierre into his bladder, in the presence of Drs. Physick and T. Harris.

It should be stated that this patient's bladder was exceedingly sensitive and irritable, so much so that the introduction of any sound into it caused him exquisite pain; notwithstanding this obstacle I caught the stone immediately and broke it several times. I then withdrew the instrument, and with it a quantity of very soft calculous

matter. The operation occupied about five minutes. Two hours after it the patient had a chill, which was followed by fever; it however passed off during the night by perspiration. He continued for several days after the operation to discharge considerable quantities of calculous matter, and stated that the pain and difficulty in voiding the urine was lessened.

December 15th. I again introduced the instrument into his bladder, and seized the stone and crushed it. This operation was not followed by any chill or fever. Numerous fragments of stone were discharged along with the urine in the course of a few succeeding days.

December 22. I repeated the operation with the same success. A few days subsequently to this operation the patient expressed himself very much relieved of his distressing symptoms; instead of being obliged to void his urine every quarter or half hour, as was the case previously, he could now retain it from one to two hours. The pain and difficulty attending the passage of the water had also abated very much, and the mucous discharge from his bladder, which had been quite abundant, was now so much lessened, that his urine was comparatively clear. Upon sounding the patient after this operation, I discovered that the quantity of stone in the bladder was considerably decreased; there appeared to be but few fragments remaining.

December 29. I again introduced the instrument into his bladder, and caught several fragments and broke them. The patient suffered less pain from this operation than from either of the former ones; he stated that his bladder felt more natural—its irritability was evidently much lessened. He continued to discharge calculous matter for some days after this operation, and felt almost entirely relieved of his old symptoms.

January 19th, 1835. I again introduced the brise-pierre into his bladder, and seized a fragment and crushed it. In a few days after this operation Captain Lelar discharged all the fragments which had been remaining, and was now able to void the urine without the slightest pain or difficulty. I now sounded him most carefully at different periods, but could not detect any particle of stone left in the bladder.

Case IX. Dr. Samuel Fahnestock of Lancaster, Pennsylvania, aged 70 years, a highly respectable practitioner of medicine, had been labouring under the symptoms of stone for a period of three years; he arrived in this city in the latter end of November, 1834, and placed himself under my care. I do not deem it necessary to give a more particular account of his case and of the operations which I per-

formed on him, than is detailed in the following letter which he addressed to Robert Walsh, Esq., a few days after leaving the city.

To the Editor of the National Gazette.

Sir,—Knowing you to feel a deep interest in the advancement of every thing appertaining to the sciences, and believing that the following account of my case will not prove uninteresting to the readers of your valuable Journal, I hereby send it to you for publication.

I am 70 years of age, and had been afflicted with the symptoms of stone in the bladder for about three years, and upon several occasions during that period, I passed a considerable quantity of calculous matter, of a dark colour, and having a granulated appearance. I am of opinion that these calculi formed in the kidney, in consequence of a violent injury which I received upon that part many years since from a fall from my horse; they descended into the bladder, and finally formed a lodgment near to its neck, and produced the usual train of distressing symptoms attendant upon this terrible disorder.

Having read the account of Dr. J. Randolph's cases of lithotripsy, published in the last number of the American Journal of the Medical Sciences, I determined to visit Philadelphia and place myself under his care, in order to submit to this operation. I arrived in your city on the 26th of November, and on the 3d of this month (December) Dr. Randolph performed the first operation in the presence of my son, Dr. William Fahnestock. Having introduced the instrument into my bladder, the doctor succeeded in a few minutes in catching the stone and crushing it, which he repeated three several times, and then withdrew the instrument. I cannot say this operation did not cause me some pain. I was only confined, however, to my bed for a few hours, and did not lose a single meal in consequence of it. I continued for several days after the operation to pass out fragments of stone, and felt so much relieved that I thought I was quite cured. Dr. Randolph, however, assured me this was not the case, and on the 8th inst. he performed another operation, which was attended with similar results. I now feel entirely free from all the painful symptoms which I so long endured, and believe myself rid of the complaint, inasmuch as I have sounded my bladder very carefully, and cannot detect any fragment remaining.

Very respectfully, your obedient servant,

Samuel Fahnestock, M. D., of Lancaster, Pa.

December 16, 1834.

Case X. I was consulted in the month of April, 1835, by Col.

Burwell Basset, of Williamsburg, Virginia, aged 70 years, on account of a calculous affection under which he had been labouring for several years. At this period his general health was slightly impaired. I ascertained from an examination with the sound, that his urethra was large and healthy; his bladder also was not very irritable, and the calculus itself appeared to be of medium size.

On the 20th of April I introduced the brise-pierre into his bladder and caught the stone immediately, and broke it without any difficulty. This operation was not followed by any unpleasant symptoms; he discharged several fragments of stone a few hours after its performance, and continued to void calculous matter for several days.

April 28th. I repeated the operation, caught the stone readily, and crushed it several times. He passed out along with the urine a good deal of calculous matter after this operation, and felt much relieved of his painful symptoms.

May 9th. I again performed the operation with similar results.

May 19th. Repeated the operation successfully.

June 1. Upon sounding the patient I ascertained that there was but little stone left in the bladder. I introduced the instrument and destroyed several fragments with great readiness. This operation was followed as usual by the discharge of sand and fragments.

June 7. I this day crushed the last remaining fragment; it was not of large size, and soon after the operation Col. Basset discharged it along with the urine, and felt entirely relieved of all his painful symptoms. A few days subsequently I sounded him very carefully, but could not discover any fragment in his bladder. He could now retain the urine for a period of five and six hours.

It should be stated here that, in consequence of Col. Basset's very feeble state of health, I used every possible caution in the performance of these operations, and did not upon any one occasion prolong them for a greater period than three or four minutes. By this careful mode of management I avoided producing any disturbance of his constitution, and was exceedingly gratified by hearing him declare subsequently that he had been cured without suffering one pang. Some months after Col. Basset's departure from Philadelphia, I learned with regret that he was labouring under a slight inconvenience in passing his urine, and some apprehensions were expressed that he might not be completely relieved of his calculus. I felt perfectly well assured myself that the difficulty was not owing to any portion of stone remaining in his bladder, and I had an opportunity a few days since of proving that this opinion was correct.

In the beginning of this month, (August, 1836,) Col. Basset passed

through Philadelphia on his way to New York, and I availed myself of the opportunity of sounding him in the most careful manner, and ascertained that his bladder was entirely free from stone. Upon this occasion I discovered that his prostate gland was enlarged, and to this cause is to be attributed the difficulty alluded to.

It is well known that a large majority of the cases of calculus occurring in adults, are attended with an enlargement of the prostate gland; and although the stone may be removed, the gland may remain enlarged, and give rise to a difficulty in voiding the urine, and in fact, in some instances, to other symptoms resembling those of stone. This fact was strikingly exemplified in the case of the late Chief Justice Marshall, from whom a stone was extracted by the operation of lithotomy, and who was said to have had a return of his calculus. From the post-mortem examination, however, we discovered that his bladder was entirely free from stone, but the third lobe of the prostate gland was so enlarged that it projected far upwards into the bladder behind the urethra, and occasioned a difficulty in passing the urine.

The Rev. Dr. Joseph Caldwell, of Raleigh, N. C., finally fell a victim to a diseased condition of the prostate gland, after having been relieved of a stone in his bladder. Dr. C. had been afflicted with the symptoms of stone for six years, and had experienced so much difficulty in voiding his urine, that he was in the habit of drawing it off by means of a catheter. In June, 1833, I extracted this calculus from his bladder successfully, by means of the operation of lithotripsy. In a letter from him, published in my first report, he states: "The pain which I endured from the operation was not severe, nor did either of the necessary repetitions of it occasion me so much inconvenience as to oblige me to keep my bed for more than a few hours. On the 23d of June Dr. Randolph performed the last operation, which occupied but a few minutes. A few days from this time I found myself free from the pain which I had previously suffered."

I presume it will not be denied that Dr. Caldwell was perfectly competent and sufficiently conscientious to describe accurately the state of his feelings and the degree of pain to which he was subjected; hence it must be conceded that no hurtful irritation could have resulted from the operations.

Dr. C. left Philadelphia on the 16th July, 1833, and almost two years had elapsed when he returned, again labouring under pain and difficulty in passing his urine. Dr. Physick and myself sounded his bladder with great care, but could not detect any stone in it; we however ascertained that his prostate gland was very much enlarged and painful. For the relief of this affection we prescribed the usual

course of treatment, but without success, as the patient died some months afterwards.

It certainly would be most unjust to attribute death in such an instance to an operation performed more than two years previously, and which had been completely successful in relieving the patient of a mortal malady.

Case XI.—Mr. James Pettigrew, a native of Scotland, aged 55 years, at present residing in New York, had been afflicted with a stone in his bladder for nearly three years. He arrived in this city and consulted me about the middle of August, 1835. On the 24th of that month I introduced into his bladder the brise-pierre, caught the stone and crushed it freely. The operation did not occupy more than five minutes. The stone was of small size and very soft. A few hours after the operation he discharged a considerable quantity of calculous matter.

The evening of the day on which this operation was performed I was attacked with an indisposition, which confined me to my chamber for between two and three weeks. During my convalescence Mr. Pettigrew called to see me several times, and showed me the amount of calculus which he had passed. He informed me that he felt almost entirely relieved of all his painful symptoms—he still suffered merely a slight pain in voiding the urine. About two weeks after the operation I sounded him in my own chamber, and could detect only one small fragment in the bladder. I told him that if he would come to my house in two days from that time I would destroy it for him there. On the following day Mr. Pettigrew called on me, and told me that it would not be necessary to operate on him again, as he was perfectly well; he then displayed a fragment of tolerable size which he had discharged the preceding evening, and assured me he was entirely relieved of all his old symptoms. I sounded him carefully several times after this, but could not detect any stone remaining. He returned to New York shortly afterwards, perfectly cured by one operation.

Case XII.—Was attended throughout by my much esteemed friend, Dr. I. Hays; he obligingly reported it in the number for November, 1835, of this journal, as follows:

Notice of a Case of Urinary Calculus, in which Dr. J. Randolph successfully performed Lithotripsy. By I. Hays, M. D.—Our number for November last, contains an account by our friend Dr. Randolph, of six cases of stone in the bladder, in all of which he successfully performed the operation of lithotripsy. Dr. Randolph informs us that since furnishing us with that communication, he has performed the same operation in six other cases, and in all with entire success.

Having been politely invited by Dr. R. to assist him in his operations upon the last of these cases, it has afforded us an opportunity of collecting some notes

in relation to it, which, with the operator's permission, we lay before our readers.

The subject of this case is one of our most respectable merchants, aged fifty-seven years, who dates the commencement of his complaint as far back as 1816; but it is only during the nine last years that he has had *marked* symptoms of urinary calculus. For two years his sufferings have been extreme, from spasms of the bladder, sometimes followed by profuse discharges of blood through the urethra, and from frequent and uncontrollable desire to urinate. He is often obliged to pass his urine every ten minutes, and the urgency of this call is so great that he is frequently compelled to satisfy it before he can open his dress, and he habitually wears a thick cloth to protect his clothes. His complexion and countenance are bad; and he has the appearance of one worn down by long and severe sufferings.

I saw this gentleman for the first time on the 28th of September, 1835. Dr. Randolph had previously sounded him, detected a calculus in the bladder, and had also ascertained by the introduction of bougies that the urethra was of sufficient size to admit Jacobson's *brise-pierre.* The patient was not in a favourable condition for an operation, having had a chill the preceding night, and his bladder being so irritable that he was compelled to empty it a short time previous to our visit. Dr. Randolph however introduced Jacobson's instrument more particularly with a view of exploring the bladder, to ascertain its condition and the size of the stone, than with an expectation of being able to proceed further with the operation; but the stone being readily caught and the patient suffering less than was anticipated, the calculus was twice caught and readily crushed, before the instrument was withdrawn. It was not thought adviseable to do more at this time, in the existing condition of the patient.

I again visited this patient on the first of October. He had passed since the operation a considerable number of fragments of the calculus. These consisted of small granules cemented together, and presenting the appearance of a mulberry calculus. The patient thinks himself benefitted by the operation. Dr. R. introduced Jacobson's instrument; this part of the operation occupied but five seconds; in five seconds more a calculus was seized. The stone was caught and crushed four times, the instrument freed from the adhering fragments and withdrawn, and the whole operation completed in a few seconds less than five minutes.

The patient was seen by me for the third time on the 15th of October. His general appearance was much improved, and he expressed himself as greatly relieved. He had passed a number of fragments since the last operation, and now thinks that there is one remaining too large to pass the urethra, as he states that he feels it occasionally entering the neck of the bladder, which causes him pain. Dr. R. introduced Jacobson's instrument, caught several times some fragments and crushed them.

At the request of Dr. Randolph, I this day, (Oct. 25th,) sounded the patient and could not detect any fragments in the bladder. The exploration did not occasion the patient any pain. The appearance of the patient is now greatly improved, his complexion and countenance are good, his spirits excellent. He says that he is entirely well, can retain his urine four or five hours, and walk as actively as any one. It will be perceived that this case was completed by three operations, and in the short period of but little more than two weeks. From the quantity of fragments collected, we should suppose the stone was of the size of a small walnut.

We questioned this patient after each operation and again to-day respecting the pain he suffered from them. His answers have always been the same, that the pain "from the operation was nothing compared to what he often suffered from the spasms of the bladder." Indeed he never uttered a groan, or desired

that the operation might be desisted from. He now says that the principal pain he experienced, was "during the working with the instrument," that as soon as this was stopped or the instrument withdrawn, all pain ceased, leaving only a slight smarting or soreness at the end of the penis. After each operation he experienced marked relief. We were particular in our inquiries respecting the pain suffered from the operation, and have stated the answers as we received them, nearly in the words of the patient, because, much difference of opinion exists on this point. It is one, however, not readily settled, inasmuch as we have no positive measure of pain, and moreover, its degree must vary in each case, according to the condition of the bladder, the sensibility of the patient to pain, and finally, it must depend in no small measure upon the kind of instrument employed and the skill of the operator. We must not conclude these imperfect notes without expressing the admiration we experienced at the neatness and skill displayed by Dr. R. in his manipulation, upon which in no small measure must depend his great success.

Case XIII. In the beginning of May, 1836, Mr. Wm. Reynolds, of Bedford, Pennsylvania, aged 62 years, arrived in this city, and consulted me on account of a calculous affection. Mr. R. had been recommended to my care by Drs. Barclay and Watson, of Bedford. Mr. Reynolds informed me that he had been afflicted with the symptoms of stone for four years; that he had suffered in consequence of it a vast deal of pain; his bladder had become very irritable, and was so contracted it would not retain the urine for a longer period than one hour, sometimes not longer than half an hour; he rarely voided at one time more than a gill of urine, and during the night it passed off involuntarily. He had never noticed any sand or calculous matter in his urine. Upon introducing a sound into his bladder, I ascertained that he had a very large calculus, and felt convinced that it was a very hard one, inasmuch as I could detect the eminences upon it which we generally find in the mulberry calculus.

I confess that I felt very anxious to know whether this stone could be crushed by means of the brise-pierre alone. I was encouraged, however, by the knowledge that in all my preceding cases I had not once failed. On the 22nd of May, in the presence of my friends, Drs. M'Crea and Johnson, I introduced the instrument into his bladder, and caught the stone immediately. I now commenced turning the screw, and found the stone to resist for a few seconds. A longer period, however, than I have mentioned had not elapsed, before I had the satisfaction to feel the stone giving way, and I succeeded completely in breaking it. I now withdrew the instrument, and with it a quantity of calculous matter. Mr. Reynolds complained but slightly of pain during the operation, and immediately after the instrument was removed from his bladder, he rose and dressed himself and walked about his room. The urine which he voided for several days after this operation was mixed with calculous matter.

June 5th. I again introduced the brise-pierre into his bladder, in the presence of Drs. Johnson and Kirkbride, caught the stone and crushed it four times. After this operation the patient discharged sand and particles of stone for several days. He was now able to retain his urine for a longer period, and felt somewhat relieved from the distressing pain he had formerly endured. From this period the mucous discharges from the bladder began to diminish in quantity.

June 9th. I repeated the operation in the presence of Drs. Peace, M'Crea, Kirkbride, West and Pepper; succeeded in catching the stone readily, and crushed it four times in the space of four minutes. The patient suffered very little pain from this operation, and immediately after it he dressed himself and walked about as usual. He passed an uncommonly good night after this operation, and discharged along with the urine a good deal of calculus. A few days subsequently he passed out several large fragments, and felt relieved of pain.

June 16th. In the presence of Drs. Johnson and Kirkbride, I caught several fragments and crushed them. On the next day the patient informed me he felt a decided change in his symptoms; after passing the urine the pain was very much lessened. He discharged after the operation a quantity of sand and stone.

June 25. I discovered a large fragment at the neck of the bladder, and introduced the instrument and crushed it. Soon afterwards the patient discharged some fragments, and experienced a mitigation of his painful symptoms. He was now able to hold his urine for a much longer period, and only voided it once during the following night. From this period the urine ceased to flow from him involuntarily during the night.

July 6. I again performed the operation successfully.

July 14. I repeated the operation, and broke a large fragment which was situated at the neck of the bladder and prevented the discharge of numerous smaller fragments, which could be distinctly felt with the sound. Three or four hours after this operation Mr. Reynolds discharged from his bladder twenty-five fragments of stone of some size, and during the remainder of the day and night he voided several other fragments, together with a good deal of fine calculous matter. These operations were not followed by any unpleasant symptoms, by neither pain or fever; he walked about and partook of his meals as usual.

July 17. I again introduced the brise-pierre into his bladder, and caught a small fragment and broke it. He voided several small pieces of stone after this operation.

July 20. Having sounded the bladder and detected a small fragment,

I caught this piece without any difficulty and crushed it; from its measurement by the instrument, however, I was convinced its size was not too great to prevent its discharge through the urethra without being broken. During the day Mr. R. voided several small fragments, and in the evening he declared that he experienced no pain after passing the urine. I now sounded him, and could not detect any stone remaining. On the 21st inst. he told me he could retain his urine four and five hours. Dr. Kirkbride and myself sounded him very carefully this day, but could not find any fragment. On the 24th of July Dr. Physick had the kindness to sound his bladder very carefully, and expressed his belief that it was entirely free from stone. Two days subsequently Mr. Reynolds was sounded by my friends, Drs. Peace, Johnson, and West, who concurred in this opinion.

The stone was analyzed by Dr. Johnson, who pronounced it to be an oxalate of lime.

Philadelphia, August 23, 1836.

ART. IV. *Topographical and Medical Sketches of Mobile for the year* 1835. By J. WIGGINS HEUSTIS, M. D.

The importance of medical topography, or a description of the situation, climate, air and water, of any given place, towards a correct knowledge of the diseases prevalent therein, was duly appreciated and acknowledged by that accurate observer and faithful delineator, Hippocrates, the father of our profession. Considering the infancy and imperfection of medical science at that time, we are surprised that an individual, with little more than the unaided strength and discrimination of his own native intellect, should have embodied so many valuable facts, and made such important deductions, as at once to elevate the profession from a state of nature to that of a science, challenging the respect and receiving the admiration of mankind. Had every physician of superior endowments possessed half the zeal, and exercised half the industry of this gifted and worthy disciple of Æsculapius, we can scarcely imagine the progress which the healing art would have made in its ascending march towards human perfectability. Whether the mind of man, in the lapse of successive ages, has degenerated with his stature, may be a subject for the speculative casuist to investigate and determine. It would appear, however, that our negligence in improvement increases with the augmented facilities

of its attainment. Books and periodicals are multiplied without end, but how small is the proportion that read even a moiety of the productions that are constantly issuing from the teeming press? When books were made, published, and perpetuated with the pen alone, none but those of esteemed merit and sterling worth received the honour and labour of a second edition. The masters and fathers of literature were conned and studied with devotion, and not read with that hasty glancing that distinguishes the heterogeneous medley of superficial learning of the present day.

With these preliminary remarks, for which I crave indulgence, I hasten to the consideration of my subject.

The city of Mobile is comparatively of recent growth. While in possession of the French and Spaniards it was a small, poor, trading establishment, surrounded by savage tribes, who resorted there for spirits and tobacco, and a few other articles of traffic; and for several years after it came into the possession of the United States it remained almost stationary, as it regarded growth and improvement. About the years 1818 and 1819 it was seriously believed that Blakely would entirely supersede the town of Mobile. The situation of the former place appeared every way more advantageous and desirable; it was of more easy access by shipping, the site was high, romantically undulating, and abounding with never failing springs of the purest water gushing from the sloping acclivities. A spirit of commercial enterprise and speculation was enlisted in its favour, and it appeared to be fast rising in interest and importance, bidding fair to become the emporium of one of the wealthiest States in the Union. But in the heyday of its opening prosperity it received a sudden and fatal reverse. The *yellow fever*, as it was then called, that dreaded scourge of our southern sea-ports, spread death and destruction through its streets; and the town that was lately full of people suddenly became as a widow, weeping in lonely desolation over her deserted habitations.

About the year 1825 the prospects of Mobile began to brighten. As the fertile lands of the interior were brought more and more into cultivation with every succeeding year, wealth and commerce began to flow hither in an invigorating stream, and within the last two or three years it has far outstripped the most sanguine calculations. Numerous and vast fortunes have been made by investments in real estate, and such is the rage and ardour of speculation, that property is constantly changing hands. The eyes of strangers were, therefore, directed to Mobile, as a place every way calculated to mend and make their fortunes, and the tide of emigration has set in with such an overflowing impetus and volume, that no places were left for its

accommodation. Boarding, house-rent, and provisions became extravagantly high, and many persons, in moderate circumstances were, in consequence, compelled to return to their former places of abode, or to seek other situations. Nor has there been any scarcity of professional gentlemen of all classes and descriptions; so that a physician or lawyer is compelled to pay a considerable portion of his income to obtain an office of the smallest possible dimensions. The present population is probably about ten thousand, and the proportion of physicians appears to be about one to every two hundred and fifty or three hundred inhabitants, rich and poor, black and white, upon an average. Law is equally abundant, and invites you with gilded characters at almost every door. And such is the state of litigation and the uncertainty and doubtfulness of titles, that the members of the bar have found excellent picking, and have fattened immensely on the spoils.

As to the population, like other sea-ports, it is a mixture of almost every class, genus, and species of the human race; among which there is a very considerable spice or sprinkling of the prolific offspring of the Emerald Isle. There is, moreover, what is called the *Creole* portion of the population, strictly speaking, the natives of the place, but here more exclusively applied to the mixed multitude, descended from the ancient inhabitants, crossed, mingled and mongreled with the negro blood, so as to present every shade, colour, and complexion, from the sooty descendant of Africa, with his flat nose, thick lips, bony legs, projecting heel, and high-set calf, to the bright brunette, with her straight black hair, sparkling eyes, and vermil lip. There are also among the Creoles some respectable families, unmixed with the negro race. This portion of the population possess manners and customs peculiar to themselves in religion, diet, education, and modes of life, varying in style according to the wealth and circumstances of the persons. One peculiarity is their fondness for garlic, which enters largely into their soups, stews, and ragouts, and appears to be an indispensable requisite to give a zest and flavour to the delicacies of the table, and which is considered, moreover, as highly conducive to health, either in neutralizing the miasms, or in keeping up the action of the exhalents, or by producing a counteracting impression stronger than those of the various miasmata; perhaps in the same way as the scent and society of goats, or the pungent smell of a sheep fold in the morning, upon an empty stomach, is said to act as a disinfection, and to keep off and prevent pestilential diseases.

This amalgamation of the white and coloured races has progressed with considerable rapidity, and is now in as prosperous a state of suc-

cessful experiment as its warmest advocates can possibly desire; so that the ringed, streaked, and speckled are rapidly merging their national peculiarities and distinctions, and assuming the bright, rich, and mellow tint of the autumnal foliage. These observations are not intended to cast any disparagement upon the respectable portion of our Creole population, which embraces many families of the first standing in society, whose wealth, character and influence secure to them the esteem and confidence of the people. Nor is it intended, by this, to draw any unfair and invidious distinction; and I merely give these particulars as historical facts, so far as they possess a relation to medical topography.

The portion of the state bordering on the Gulf of Mexico, for many miles into the interior, appears to be an alluvial formation of comparatively recent date;* and there can be no doubt but that at some former period the bay of Mobile extended as far up as the junction of the two rivers, the Tombigby and the Alabama, and from Mobile to Blakely. The intervening islands appear to be of still more recent growth, formed by the accumulation of drift wood, and the gradual deposite and accumulation of earth and soil, brought down by the yearly and frequent floods. This work is still constantly progressing, and may be seen in the increase of the low marshy islands in the vicinity of the city; and the probability is, that should the world stand a few centuries longer, the entire bay will be filled up, with the exception of the channel for the egress of the river. The islands between Mobile Point and New Orleans have, doubtless, been formed by the rivers on the one side, and the tides of the ocean on the other, washing up and depositing sand and shells, forming a barren soil, fit only for the growth of the pine and other plants that shun the verdant hills and fertile plain, and delight in sterility and desolation.

The last high land on the Alabama is at Claiborne, about one hundred and fifty miles above Mobile. About a year since, on landing and ascending the bluff by a winding road that led up to the village, my attention was arrested by an unusual collection or deposite of marine shells, embedded in the bank that formed the boundary of the road, where the latter had been lately dug out and repaired. Many of these were entire and perfect,—a heterogeneous assemblage of great variety. Such things, I know, are frequently met with, and yet, notwithstanding their frequency, one can never view them without feel-

*One of our citizens, who lives on an eminence in the vicinity, in digging a well, after going through strata of clay and sand, at the depth of about twenty-five feet, came to marsh mud, containing portions of trunks of trees, limbs, leaves, ferns, &c., in a state of considerable decay.

ing his mind strongly impressed with wonder and admiration, as he reflects upon the astonishing changes and revolutions that have taken place in this planet which we inhabit.

The more hardy of the tropical fruits, the fig, here flourishes in great perfection, but the more tender, as the cocoanut, the various species of the citrus, the musa, &c., sustain but a forced and precarious existence; and it is remarkable that not only in Europe and Asia, but also in South America, these desirable plants should flourish in as high a latitude as thirty-five, whilst in our climate they will not succeed in the latitude of thirty. It would seem that our arctic region possesses a greater intensity of cold in its icy bounds, than any other portion of the globe; and not unfrequently, its piercing breath pours down in bitter blasts from one extremity of our country to the other, greatly mitigated in its intensity, however, before it reaches our southern confines.

I have, in a preceding number of this work, treated of the climate of the middle section of the State of Alabama, to which little need here be added. As Mobile, however, is nearer to the ocean and to the Gulf Stream, and withal about two degrees further south than the latitude of Cahaba, the climate, in winter, is milder than that of the latter; and in summer the air is delightfully tempered during the day by the sea-breeze, which sets in with great regularity, almost daily, between nine and ten o'clock. At this season, however, in that portion of the city near the water more particularly, there is a considerable drawback on domestic happiness and enjoyment, from the annoyance of the mosquitoes, which begin to make their appearance in April, and continue more or less numerous until the month of November. Of these, there are three or four species, some of which are our assiduous attendants during the hours allotted to repose, whilst others, less sensitive to the solar light, sport in the day; and to the female portion of the population, from their sedentary mode of life, are exceedingly annoying: so that it is not unusual to see a small black servant assiduously employed in protecting her mistress from the stings and bites of these troublesome and venomous insects. Venomous they unquestionably are, as every person who has been bitten by them can affirm; and both in children and adults I have known them frequently to occasion obstinate and painful ulcerations of the lower extremities.

The past winter, 1835 and 1836, has been remarkably mild, the thermometer, for the most part ranging from 55 to 75, from 9 A. M. to 6, P. M., and seldom sinking to the freezing point, on which account the season has been remarkably favourable to phthisical pa-

tients, several of whom I have known materially improved in health by coming from the inclement region of the north to this more favoured latitude. Whilst others, fearful of risking the vicissitudes of the season, have sought the balmy and vernal winters of Havana and Key West, with great relief and benefit to their frail and shattered constitutions. The benefit here spoken of, however, is for the most part confined to the early stage of the disease, and before ulceration has made any considerable progress. It is much to be regretted that when all the assiduity of tenderness and friendship, and all medical skill and attention has failed, and hope itself has almost expired, that the unhappy patient should then set out on a pilgrimage of health to a distant land, with the soul-subduing and melancholy consideration that, in all probability, he must die amongst strangers, far from his relatives and friends, and the soothing endearments of home. Such, unfortunately, has been the fate of many, and many, too, of the most valuable and interesting of our citizens and friends, who had too long deferred their migration to a warmer climate.

The month of March is here often blustering and cold, and it not unfrequently happens that there is more cold weather this month than in any other of the whole year; the thermometer not sinking so low as in the months of January and February, but altogether a greater amount and aggregate of cold and disagreeable weather, in which the mercury frequently falls to the freezing point, with a sharp wind from the north and north-west.

As the site of Mobile is but little elevated above the level of the bay, the well water is warm and brackish. The city, however, is tolerably well supplied with good water, brought in log trunks from Spring Hill, a distance of five miles. The water of the source has an elevation of about four or five feet above the level or highest part of Mobile; and by raising a greater head it is thought that there can be obtained an abundant supply for the whole city. After being brought to the town, it is conveyed through the streets in iron pipes, from which each house is supplied by paying a dollar per head by the year. From the iron pipes the water is conducted to the different lots in leaden tubes. It has been thought by many, and by some of our physicians, that these leaden pipes impregnate the water with a poisonous quality, in consequence of the corrosion of the metal from the action of the water upon it. But as the air is excluded, it is contrary to chemical laws for any solution to take place, without previous oxydation, from contact with atmospheric air. Moreover, the city of London is supplied with water by the same description of tubes, without the suspicion of any injurious effect. It so happened, however, that there was

an unusual prevalence of bilious colic in the spring of 1835, and the same disease also prevailed this year, but to a less extent, and many were willing to attribute it to the leaden pipes; but the symptoms of lead colic and of any other species of that disease are so dissimilar and distinct as to admit of easy discrimination; so that none but the most careless observers, or physicians of the most limited experience and observation, could mistake the bilious for the lead colic.

The soil of Mobile, for the most part, is sandy and dry, with here and there a few intervening wet places. On the northern side of the city, however, the land is wet and swampy, consisting of a soft black mud, apparently without any solid foundation. This description of land extends up the river, for the distance of nearly two miles. But, notwithstanding its forbidding appearance, the growth and improvement of the town, are extending principally in this direction. Streets are opening through this black morass and up the river with rapid strides, although much labour and expense will be required to properly drain, graduate, and fill up this portion of the city, so as to render it dry, pleasant and healthy; until such improvement shall be made, persons residing there throughout the year, will be liable to the different grades of bilious, or endemic fever, of either the intermitting, remitting, or continued type. As the new streets are opened and built up, they are graduated so as to carry off the water to the natural drains and branches, and then receive a coat of cockle shells four or five inches in thickness. This soon forms a firm, smooth, and solid road; but, in a few years, the surface becomes ground up into a fine impalpable powder, forming in the dry hot weather of summer, a light subtile dust, penetrating the most secluded recesses of the houses; and, in wet weather is converted into a thin sloppy mortar, the hardened crust beneath of shell and lime being impermeable to the water, and that portion which does not run off, incorporates with the pulverized shells, and forms an extremely muddy and disagreeable surface. These shells, with which the streets are covered, are found in vast beds in and upon the river banks. As before remarked, the bay, and, of course, the salt water, formerly extended up to the junction of the Tombigby and Alabama; and the animals of these marine exuviæ then inhabited their native and proper element, but the encroachment of the land, and filling up of the bay, has gradually destroyed these testacea, so that nothing now remains but these accumulated relics of former generations.

Among the plants and shrubbery with which the marshes abound, is the showy and beautiful *Gordonia*, with its large white blossoms,

in thick and countless profusion. The *Bignonia catalpa*, with the local nativity of which Mr. Nuttal expresses himself unacquainted, here grows spontaneously, in undisturbed seclusion upon the river banks. The country is rich in botanical treasures, and many new genera are yearly brought to light by the lovers of this interesting and delightful study.

From the middle of the city, extending down the bay for several miles, the country is dry and sandy, producing little else than the long leafed pine, with the exception of a few slips of hummock upon the bay, agreeably diversified with the *Cornus*, *Halesia*, the different species of Magnolia, &c. The coast bordering upon the bay is considered unhealthy, and experience proves that it is so to a considerable degree, as the sea-breeze, which sets in every day, blows over a quantity of decaying drift-wood and other perishable matters, cast upon the shore by the wind and tide. The centre of the city and that portion extending out towards Spring Hill, to the distance of seven or eight miles, is healthy; more especially Spring Hill, which is dry and elevated, entirely free from all stagnant water, and its accompaniment, mosquitoes; persons resorting there and resident inhabitants, enjoying, at all times, the best of health. Upon the whole, Mobile may be considered a healthy place, and probably more so than almost any other portion of the state, as a comparison of several years appears clearly and satisfactorily to confirm.

During the hot months of summer, from the 15th of May to the 15th of September, about an average degree of temperature would be from 76 to 80, at night, and 86 to 88, from 10, A. M., to 6, P. M. In a work formerly published, I have taken some pains to show the temperature of different climates, seasons and situations, peculiarly liable to bilious or yellow fever, and have there come to the following conclusions:—"That a range of temperature from 70 to 86 of Fahrenheit, is necessary to the production of the bilious endemic, or yellow fever; that the temperature should not fall much, if any, short of 70 at night, nor of 86 in the heat of the day. But it may be remarked, that the higher the natural temperature of the atmosphere, provided it is not sufficient to dissipate moisture, the greater the putrefaction, and the more sickly the season; always bearing in mind, however, that a greater degree of heat will compensate for a deficiency of corruptible materials, and an excess and abundance of the latter will be equivalent to a greater degree of the former."* It will be seen

*Medical Facts and Inquiries respecting the Causes, Nature, and Cure of Fever, p. 39.

from this, therefore, that in our southern climate, we always have a temperature, during the summer months, sufficiently elevated for the production of bilious or endemic fever; and that all that is necessary for its prevalence is a concurrence of other causes favourable to its origin, and these, as just stated, are a certain degree of moisture and amount of corruptible animal and vegetable substances. Hence the necessity of strict and particular attention to cleanliness in our cities, and to having them properly drained, so that as little stagnation and putrefaction may take place as possible. But, even with the greatest care and precaution, sickness, and even pestilence will frequently prevail in the best regulated communities, and set at naught man's puny efforts to foresee and counteract the causes and origin of disease.

I think it has generally been found that the suburbs and outskirts of a city are more unhealthy, during the summer months, than the more central and thickly populated portion of the town; at least, such appears to be the fact in Mobile; and for this one or two reasons may be assigned. First, the suburbs and outskirts being but little or imperfectly improved, suffer from stagnation of water after rains, which, standing in holes and low places, soon undergoes fermentation from exposure to the summer sun. Secondly, it is probable that the smoke of the more thickly inhabited portion may have a considerable effect in correcting or neutralizing the unwholesome damps and miasmata existing in the atmosphere.

The predisposition most favourable to the production of bilious fever is a constitution unaccustomed to the climate. Thus, persons from the northern and eastern states seldom escape an attack of fever during the first summer of their residence here. And the same observation applies, in some degree, to persons from other of the Southern States, and even from the interior of our own, owing probably to a certain peculiarity of the air and water, which, although in general congenial to the acclimated, is unfavourable to the new emigrant. But, although long residence and acclimation are the best securities for health, they confer no certain exemption and immunity from disease; and our autumnal bills of mortality are yearly augmented by the names of old and respectable inhabitants, who have fallen under an attack of our annual epidemic. It is greatly to be regretted, however, that the destructive vice of intemperance comes in for so large a share of votaries and victims. The numerous grog-shops, groceries, barrooms, and places of retailing ardent spirits, from the most loathsome sinks of drunkenness and depravity to the higher order of hotels and public boarding houses, afford a striking and lamentable illustration of the vast extent and prevalence of the use and abuse of this

pernicious and demoralizing article of traffic—worse poison to the souls and bodies of mankind than all the native drugs, either of the mineral or vegetable kingdom. True, I have known a few instances where many years of successful perseverance in habits of intemperance has been followed with comparative exemption from any actual disease, at the same time that the entire system was bloated and crimsoned with the inflammable materials, and the whole of the swollen mass probably so combustible, as to render the blowing out of a candle an extremely dangerous experiment, and which might be instantly followed by the violent explosion of this living and portentous alembic. In the majority of instances, however, its effects are more sudden and destructive. Instead of arriving at the drunkard's elysium, fictitious and rubicund health, swollen and purpled complexion, and enlarged and porpoise-like dimensions, the unhappy debauche becomes shrunk, pale, and withered. The over-stimulated nerves and organs cease to perform their proper functions, and the poor, weak, and unresisting votary of Bacchus soon becomes his victim. From my own observation, I think one fact is satisfactorily established, which is, that in persons accustomed to the intemperate use of ardent spirits, all acute diseases are remarkably rapid in their progress, and often fatal in their termination. But I must forbear to enter further upon the consideration of this subject, deeply interesting as it is to the moralist and physician, and addressing itself, as it does, by its bearings and effects upon the social relations, to the best feelings and sympathies of our nature. As it would be visionary and utopian to hope to eradicate vice from human society, so the physician who lives upon the luxury, dissipation, and refinement of others, and the numberless ills, accidents and calamities that flesh is heir to, can only prescribe for disorders as he finds them, from whatever cause they may arise, and endeavour to remove or mitigate disease, and soften the bed of wretchedness and pain.

The year 1835, in the main, might be considered as healthy, although a number of deaths occurred in the spring among children from the scarlatina anginosa. As there was little peculiarity in this disease different from what has already been laid down in medical authors, it is perhaps unnecessary to dwell upon it. I would, however, remark, that in most cases there was a great prostration of the vital forces, with a small and frequent pulse, considerable swelling and inflammation of the throat and neighbouring glands, and corresponding difficulty in deglutition, for the removal of which local symptoms, epispastics, applied in time, were of the most signal service—where the inflammation was less, the volatile liniment was sufficient. I would

further observe in relation to the treatment of this disease, that as far as my information and experience extended, calomel was a pernicious medicine, appearing to aggravate every symptom, and to depress still lower the flagging energies of the system. I never exhibited more than a single dose, and that at the commencement, and in combination with one or two grains of ipecacuanha.

The next disease in the order of time was the bilious colic; at which time, as also antecedent to its prevalence, diarrhœa prevailed, attended in several instances with strongly marked symptoms of cholera. A few cases also of real cholera occurred, though principally on board the steamboats and among the crews, whose life is one continual state of exposure. More deaths took place from the bilious colic than from the bilious fever, which succeeded it as an epidemic. The disease, unless speedily relieved, was prone to run into and occasion arteritis. The only fatal case that occurred in my practice was that of a man who had been sick eight days before I saw him, and in which the spasm and constipation had never been removed, and where tympanitis and inflammation, on the verge of sphacelus, already existed. Previously to his death the bowels appeared to become more permeable, and several dark bilious and offensive discharges took place; but from subsequent appearances this was merely the consequence of the relaxation attendant on incipient mortification and general extinction of the muscular forces: and yet the symptoms appeared to be considerably relieved by these operations, so that hopes began to be entertained of his recovery. He died on the seventh day of my attendance. Permission was granted to open the body. On dissection, the whole alimentary canal, with the exception of the stomach, appeared to be completely disorganized: there were no traces of blood vessels. In many places the bowels were united to the peritoneal lining of the abdomen, and the different convolutions to each other. The whole anterior and lateral portions of the abdomen were covered by the colon, which was enormously enlarged and distended with flatus, and of a black, blue or carbonaceous colour. The intestines themselves were tender and easily lacerated, and, in sundry places, perforated with holes; but as they were in close contact with the parietes of the abdomen, effusion did not, probably, take place to any extent during the life of the patient. The stomach and the inferior portion of the colon were the least diseased. Considerable collections of pus were found in the cavity of the abdomen. The intestines contained a large accumulation of dark greenish and extremely offensive matters. The lower portion of the colon was small and contracted, as high up as the sigmoid flexure. The liver was much enlarged, and its right

and inferior portion of a dark mahogany colour, and very tender, the fingers penetrating it with little force. Notwithstanding the inflammation had run so high, there had been but little complaint of pain from the period that I first saw him, nor was there any or very little tenderness on pressure; nor, except occasionally, where the distention was very great, was there any distress, showing that high inflammation of the bowels may exist without betraying itself by tenderness or pain.

My practice in this disease was first to relieve the spasm and pain by anodynes and the warm bath, if inflammation had not already taken place. If inflammation and fever had come on, copious bleeding was resorted to; although in the use of the lancet here, as in every other instance, the extent should be carefully adjusted to the constitution, effect, and other circumstances of the patient, as for want of proper attention to these things I have known the strength and pulse to sink almost beyond the power of recovery. In the use of anodynes, however, less caution appears to be required, as I have never known any permanent injury or serious effects produced by them, although I have frequently given as much as an ounce of laudanum to a patient in the course of a short time, either by itself or in combination with other stimulants and antispasmodics; but wherever it has been necessary to give it to any considerable extent, by way of precaution I have generally added an emetic, either of white vitriol or ipecacuanha, to cause it to be rejected as soon as relief might be obtained. As an anodyne, however, of great power, I often had recourse to tobacco; two drachms, boiled in a pint of water, made a safe and often an effectual enema, relaxing and relieving the spasm and pain, and operating as a speedy cathartic.

As in every other disease, so in this, calomel was generally exhibited with considerable freedom; in this instance, however, I can say but little in favour of its boasted virtues; and it is to be feared and regretted that in this, as well as other diseases, so many, after being relieved from the symptoms of the original disease, die from the effects of salivation, or from inflammation and gangrene of the mouth and fauces, and from mercurial fever. Cases of this description have doubtless often fallen under the notice of every practising physician, affording him melancholy occasions to lament over the misdirected skill and the failure of his profession. It has been my fortune to witness, as most physicians have who have been long engaged in their profession, all the varied forms of practice, from that of the most rational and judicious, to the nostrums of old women, the impositions of quacks, and the absurdities of those patent man-killers,

the Thompsonians, so that accident has frequently thrown into my way the unfortunate victims of calomel, who had been treated with all the liberality that even Dr. James Johnson himself could desire or recommend.

The objection to the use of calomel in bilious colic, and indeed in colic of any kind, is that before it can exert any specific effect over the disease the patient may die from pain and inflammation, or from a sudden collapse of the powers of life, if the onset has been violent. Besides if, as the name of the disease implies, the biliary system is already in a state of preternatural excitation, what can be the object of its exhibition? Will it be contended that it is to subdue and regulate this morbid action, and to bring it to a normal state? The operation and effects of this article must be truly wonderful in possessing this omnipotent power and control over the condition and functions of the liver, that if its action is impeded it can quicken and arouse it to a healthy grade, and if it is too highly excited it possesses an equal power to subdue it. But, admitting that it operates in all these modes, and in every other possible variety of way that its most sanguine advocates contend for, here is a violent spasmodic affection of the bowels, which, if not speedily relieved, will soon bring on fatal inflammation, and it is highly probable that a degree of inflammation is cotemporaneous with the formation of the spasm. Will calomel act as an antispasmodic, or subdue inflammation by its direct application to the inflamed surface? Oh, no; but it will relieve the congestion of the liver, counteract and control its morbid action, and carry off the bile. But before this can be accomplished by the power of calomel the patient is placed *hors de combat*, and sinks to rise no more. But so far is the operation of calomel from exerting any salutary control over this disease, that death takes place even after salivation has been fairly established, and to which fatal termination this medicine has, doubtless, frequently and essentially contributed.

It was remarked above that this disease was prone to run into inflammation, to counteract which, as well as for the purpose of relaxing the spasms, the warm bath was of essential service; and, indeed, when all other remedies have proved ineffectual in affording ease, I have scarcely ever known this to fail in procuring at least temporary relief from suffering and pain. The remedy of course was repeated as often as the urgency of the symptoms required.

As answering the same indication, cupping was also a valuable remedy. I have repeatedly procured immediate relief by the exhibition of an anodyne, and two or three applications of White's cupping

apparatus over the seat of the disease. The relief afforded by cupping is almost immediate, and often permanent.

In the treatment of this disease drastic purgatives should be carefully avoided, as they serve only to aggravate the disease, and the reason is sufficiently obvious; and, indeed, I have known a relapse produced by the use of an active cathartic, taken for the purpose of removing constipation, in the progress of convalescence. Here, then, the spasm was produced after the fæcal contents of the intestines had been effectually removed, and that by the mere action of the purgative upon parts still in a weak and irritable state. Now, according to the purgative doctrine, here was again a necessity for a repetition of the cathartic, and yet the disease yielded by the use of anodynes, cupping, and the warm bath, followed by a moderate dose of senna and manna. It is in vain that we attempt to bore a passage through the bowels with calomel and jalap, or any other medicine of this class, while the alimentary canal is in a state of spasm and inflammation: these morbid states removed, the disease becomes effectually relieved, and the intestines again resume their healthy function without the employment of any violence or force. These are truths so perfectly obvious and plain, that it might be considered strange they should be overlooked or disregarded, and yet how seldom are they taken into consideration? The language is, "if a passage could only be procured the patient would be safe;" and calomel, jalap, castor oil, and a host of articles are given in rapid succession and with indefatigable zeal. True, their mischievous effects are often at the same time counteracted by the use of the lancet and the warm bath, but still the plan of calomel and purging is never intermitted, and if the patient survives, great praise is awarded to the physician for his skill and success, when in reality unassisted nature would in all probability have accomplished the object with more expedition and safety. In fact, the disease must be of an anomalous character, and such as in the course of a long practice I have never met with more than once or twice, that will not yield to antispasmodics and the warm bath, cupping, enemata, and mild laxatives. I have seen the symptoms of cholera, rice water discharges, spasms of the limbs, attended with torpor and coldness, and a pulse scarcely perceptible, suddenly arrested by a single exhibition of a liberal dose of opium, camphor and calomel. Whether the addition of the calomel was of any essential service, I am unable to say; perhaps its salutary effect, if any it possessed in such cases, may be accounted for on the principle of the homœopaths, that *similia similibus curentur*, of which numerous examples are adduced by Dr. Hahnmann, the author of this strange

and seemingly visionary system. It is well known, however, independently of all theory, that calomel possesses the power in many instances of tranquillizing the morbid action of the stomach. I am willing to allow all due credit to calomel as a useful and valuable medicine when given with proper discrimination, and it is only the abusive extent to which it is frequently carried that I censure and condemn. A strong objection to the continued and free use of calomel in bilious colic, and indeed in any species of this disease, is that, without possessing any control over the complaint, salivation is apt to ensue before the regular peristaltic motion of the bowels can be established; but even if this event should not happen, dependence upon it is leaning upon a broken reed; and if, unfortunately for our repose, there should remain any sensibility, sympathy and feeling in our nature, it will be almost certain to disappoint our hopes and to wound our peace. Too often has the physician just occasion for regret that his best effects prove unavailing, although judiciously and properly directed; but when death ensues from any neglect, mismanagement, or other impropriety on his part, his reflections must be painful in the extreme. I can speak feelingly and from the self-experience of younger years, but I trust that I have profited by the lessons of my former life, and have gathered useful and enduring instruction from former accidents and misfortunes.

A resort to calomel is often the refuge of ignorance and incompetence. When the physician is doubtingly and despondingly sitting at the bed-side of a patient, whose life appears to be trembling, as it were, upon a needle's point; and when his wandering thoughts have become lost and bewildered in uncertainty and doubt, how pleasant to call home the scattered ideas, and concentrate and anchor them in that sure and safe repose, calomel! How admirably convenient, too, for the young physician, scarcely shooting the pin-feathers of his profession, who, although not doubly armed for life or death, like the unfortunate John Brown with his opium and lancet, yet with this single club of Hercules—this jaw-bone of Sampson—this lever and fulcrum of Archimedes—he considers himself fully competent to slay the many-headed monster, to discomfit the ranks of opposing hosts, and to turn and overturn the little world around him.

About the middle of May, the fever began to make its appearance. In most instances, it was of rather a mild character, and yielded without difficulty to proper treatment. The type was generally that of the remittent, although many cases were of the continued form, particularly in strangers, attended with severe pain in the head and back.

In some, the disease assumed the form of the malignant intermittent, in which, towards the termination of the paroxysm, there would occur great weakness and prostration of the system, with a pulse small, thread-like, and scarcely perceptible, at the same time that the brain and intellect were considerably affected with wandering or stupor, and, in some instances, with complete apoplectic lethargy, from which it was impossible to arouse them until the paroxysm had entirely subsided, and the powers of the system again resumed their recuperative efforts. In a strongly marked case of this description, the disease appeared to be confined entirely to the nervous system, the pulse being regular, moderately strong, and not frequent or tense, but such as I have generally remarked in comatose affections, and which might be called the apoplectic pulse. These apoplectic symptoms continued to return for three or four days. Quinine was given freely in the intermissions, or during the recess of the apoplectic symptoms, and the man recovered.

The bowels were variously affected; costiveness seldom prevailed, and generally there was a disposition to watery stools. Nothing like black vomit was observed, nor was the disease of that aggravated character that I have frequently witnessed in the interior of the state. Only one death occurred under my observation, and that was a delicate young married woman, far advanced in pregnancy, who had been treated on the Thompsonian plan for several days before I saw her. The disease vented its violence, as is common in such cases, on the brain and nervous system, the faculties becoming gradually overpowered by and buried in lethargy and stupor.

In the treatment of this disease, I generally commenced with the exhibition of about fifteen grains of calomel in combination with four or five of ipecacuanha. The calomel was, in some instances, repeated two or three times, but was not relied upon as an essential remedy; and, indeed, in several instances, I succeeded equally well without the exhibition of a single grain.

Where the pulse would authorize it, the lancet was had recourse to with advantage; and in some cases the bleeding was repeated five or six times, but, in general, its free use was not required.

A remedy of leading utility was the cold-bath, or, where the fever was more moderate, sponging the body with lime juice and water, and the application of linen cloths, wet with cold water, to the head and stomach; these were repeated, according to the urgency of the symptoms. Where there was no disposition to watery stools, cream of tartar, in solution, was given as a drink; but if the bowels were in an irritable state, lemonade was substituted.

As a diaphoretic, I used the following with much benefit:

℞. Nitrat. potass. ʒj., vin. antimon. ʒji., sp. nitros. ℥ss., aq. font. ℥jss. Dosis. coch. parv. omne tertia hora.

Where it was necessary to control the action of the bowels, a drachm or two of paregoric was added to the above prescription. This preparation I prefer to the common nitrous powders prepared with calomel, as I have not unfrequently found the latter to produce severe griping and dysenteric symptoms; it is well known that calomel itself will sometimes produce great irritation of the intestines. In one instance, I have known the greatest pain and agony produced by the operation of a single moderate dose of calomel, in a patient previously debilitated by disease; he was relieved by anodynes, but never recovered from its effects, the disease from that time gathering strength, and becoming irremediable.

In addition to what I have said on the subject of bilious colic, in relation to calomel, little need here be added. Where this article is fundamentally relied on, the practice is irrational, degenerates into empyricism, and is often the common cloak of ignorance and incompetence. When rightly administered, it is a valuable remedy, but it is still questionable whether, in the reckless manner it is often exhibited, the profession and the cause of health and humanity have not lost more than they have gained by its introduction into practice. In behalf of calomel, it has been said that there is no other medicine that possesses the power of arresting those liquid and watery discharges from the bowels which often occur in bilious fever as well as in pleurisies, scarlatina, inflammations of the lungs, &c. The favourite prescription is calomel, opium, and ipecacuanha, or calomel and Dover's powder. I know not what success has attended the practice of others in this particular, but, as far as my own experience extends, I think I am authorized in saying, that calomel possesses no such power, but rather aggravates the symptoms, for I have not unfrequently observed that these discharges continue not only under the exhibition of this prescription, but even after the system has been thoroughly impregnated with the calomel, as indicated by the breath, the livid and swollen gums, the parched and inflamed fauces, and the crisp, red, smooth, and horny state of the tongue. And true it is, that I have known all these symptoms looked upon as parts and accompaniments of the original disease; and as only affording a stronger argument for the more vigorous prosecution of the medicine. In this way I have known an artificial disease produced and kept up by the daily exhition of calomel, and because a flow of saliva has not been excited, it is taken for granted that the medicine has not exerted its specific

effect upon the system, or not been given in sufficient quantity; it is, therefore, pushed still further, and sloughing and mortification of the gums, cheeks, and fauces, and death itself follow in the train of consequences. Let the young practitioner, therefore, be aware of this dangerous rock upon which so many lives have been prematurely lost. Once and again have I raised my voice against it, and although it may have excited the sneer of incredulity and of fool-hardy self-sufficiency and prejudice, may, perhaps, arrest the attention of more modest prudence and discretion. But it is said that, in desperate cases, salivation affords the only chance of recovery, and that all the melancholy consequences of salivation should be risked rather than lose the life of the patient. Were this position founded in truth, and were this the only alternative, the argument would be plausible, and, perhaps, just; but experience too surely proves, that in the more aggravated cases it is impossible to produce a salivation; that is, if the fever and excitement are too high, the sialagogue power of mercury is counteracted, or, if too low, the system is insensible to its influence. In other instances an artificial disease is produced, or the original symptoms more highly aggravated by the exhibition of calomel. Not long since, I was called to a distance to see a patient, in consultation with another physician. It was a case of bilious fever of some three or four weeks duration. The patient was exceedingly emaciated, and subject to daily returns or exacerbations of fever, which would come on about 10 o'clock, A. M., and continue until midnight, ending in profuse perspirations, so that the bedding seemed as if it had been drenched in a shower. The patient would then be left cold and pulseless for three or four hours, the eye, countenance, and intellect retaining their expression and intelligence, whilst every part of the body felt as if labouring under the cold damp of death. There was some redness and soreness of the fauces. The tongue was dry, smooth, and horny, and as red as crimson; the papillæ were obliterated, and the most pungent substances afforded no taste. The patient had been treated on the calomel plan; but, as salivation had not been excited, this remedy was still persisted in, and in augmented quantity, so that at the time I saw him, he was taking forty grains of calomel a day, together with the free use of nitric acid for the cure of a supposed hepatic affection. From all the circumstances, I unhesitatingly pronounced it a case of mercurial fever. The calomel and nitric acid were, of course, discontinued; quinine and other tonics were exhibited during the sweating stage and remission of the fever, and the diet regulated, so that in a few days he was able to take the exercise of a carriage, and in a short time perfectly recovered. This is only one of

the many instances of a similar kind that it has been my misfortune to witness; and if others have failed of like observation, it has not been owing to the want of subjects, but because their attention was differently directed. In the allusion to the above case, I have purposely avoided time, place, and names, so that no injury can possibly result to the attending physician, who was highly respected in his profession, and who is now the only person that would probably recognise the circumstance.

A few remarks will suffice in relation to the article of quinine. When the disease was marked with distinct intermissions, the pulse becoming soft and natural, the skin cool, and the head and epigastrium free from pain and uneasiness, this remedy might be given with advantage and success; but, under contrary states of the system, when the remission was imperfect, the pulse accelerated fifteen or twenty pulsations above its natural beat, although small, weak, and compressible; when little or no moisture had preceded or accompanied the remission; when any degree of restlessness or stupor existed, with a red and dry tongue; under such circumstances, quinine was, at best, a doubtful remedy. True, in some instances, it might succeed, particularly if a free perspiration was thereby excited; but yet, in a majority of cases it would fail, every symptom becoming aggravated under its exhibition. When circumstances authorized its use, I seldom found less than twenty grains sufficient to arrest the recurrence of the paroxysm. If the intermission was short, it became necessary to make the doses proportionably large, in order that the system might be speedily brought under the influence of its stimulating operation.

It may be proper to make a few remarks upon the subject of cathartics and emetics in this disease, and the same observations will be applicable to fever in general. And here I am free and willing to admit that the doctrine of Broussais, although, like other theorists, he may be too exclusive, and have carried his system to extremes, yet it has had this beneficial effect, that it has counteracted the dangerous and pernicious practice of the Hamiltonian school, against which I have uniformly protested since the year 1822. It is, however, much to be regretted, that so many physicians still pursue the old plan of purgation, in opposition to the plain demonstration of experience. I have known forty grains of calomel given at a dose to a patient who was scarcely able to rise without fainting, followed up by a liberal libation of castor oil. The consequence was that the liver and intestines were stimulated and goaded into increased action; the stools were mixed with large quantities of grumous and coagulated blood; the general system sympathizing in the local irritation, was

thrown into an augmented paroxysm of fever, which only subsided with the cessation in the operation of the cathartic. It is scarcely necessary to say that the event was disastrous. But, notwithstanding the exhaustion and the increased debility thereby occasioned, the green, sooty, and bilious appearance of the discharges convinces the physician, and is demonstration clear to the friends of the patient, that the practice was right, and that there was an urgent necessity for its employment, not reflecting that these morbid appearances in the excretions are the result of morbid action, and that the same appearance will be exhibited on the repetition of every cathartic, until death ensues or convalescence is established. A short time since, I saw a patient labouring under cholera morbus, vomiting and purging copiously a green watery fluid; now, according to the doctrine of purgation, here was a necessity for promoting the expulsion of this offending matter; but, whatever had been the exciting cause, the stomach and bowels, having assumed a diseased action, were still under the remote influence of the original impulse, although the offending cause had been removed. The stomach was highly irritable, and rejected, in a short time, all the fluids that had been swallowed, tinged with the same verdegris complexion. I exhibited a pill of opium and camphor, applied a mustard plaster to the region of the stomach, and interdicted all drinks for the space of three hours, and in this way he was speedily relieved.

But although severe and repeated purgation is highly prejudicial, it is still important that the bowels be kept regular and free; and for this purpose cream of tartar, or tamarind water will generally suffice; and it not unfrequently happens that even these simple drinks will run off too freely by the bowels, and require the exhibition of an anodyne. Sometimes a Seidlitz powder may be required. With the same view enemata may be frequently employed, without any risk of overaction and debility.

At one time, tartarized antimony, as an emetic, was considered as the *sine qua non* in commencing the treatment of bilious fever; and very plausible reasons were assigned in accounting for its beneficial powers and operation in this disease. But as the premises are untrue, the argument is inadmissible; and from sufficient experience I am authorized to assert that the exhibition to tartarized antimony, as an emetic in bilious fever, is the most dangerous practice that can be pursued. And when we hear and see asserted now many patients were suddenly relieved by the operation of this drug, we may rest assured that it is altogether an ex parte representation, carefully concealing the numerous instances of sudden death and inevitable col-

lapse its exhibition has occasioned. In many instances this article operates as a deadly poison, suddenly prostrating the powers of the system, without bringing into action either the stomach or intestines; in other instances no emesis is excited, but copious watery discharges from the bowels are occasioned, succeeded by a deathly palor, coldness and lividity of surface; the serosity of the blood, at the same time, exuding in a copious shower from the relaxed capillaries; and death suddenly ensues, as if the patient had been smitten with the fatal touch of the cholera.

The same objections do not apply to ipecacuanha, and I have frequently employed it in moderate doses of four or five grains in combination with calomel, at the commencement of the disease, and with good effect in breaking or weakening the chain of morbid actions. Unlike tartar emetic, I have not found it to increase the irritability of the stomach, or to aid in that protracted vomiting that is frequently caused by the antimonial preparation.

In conclusion I would remark, that there is considerable diversity in the fever of our different seasons, as also in different patients, and that it becomes necessary to modify the treatment according to the character of the disease and the nature of the prevailing epidemic.

Much has been said and written about yellow fever, but, in all my experience, it has never been my fortune to meet with an epidemic of that specific character; true, I have seen cases that might be and were called yellow fever, but not coming up to Dr. Pyms' definition and distinctive characteristic of this disease. In short, I have seen no difference in our autumnal fevers but in degree and violence; in some the disease being slight and of short continuance, and in others, and especially in strangers, more aggravated, obstinate and malignant—coming up to the description of the causus of Hippocrates and Aretæus, or even the yellow fever, *(si placet,)* but, still arising from the same general causes, acting upon a stronger predisposition, and more vulnerable susceptibility. As well might it be contended that dew and rain, frost, hail and snow were not the same in their elementary composition, as that the diversified grades of our summer and autumnal fevers are not different modifications of the same disease. The appellation *yellow fever* is morally and physically wrong. The minds of the community are sufficiently sensitive to the reports of ordinary diseases, without harrowing up their fears by the alarm of this terrific misnomer, carrying dismay and destruction before it, and investing every indisposition with the terrors of approaching fate.

Mobile, July 6th, 1836.

Art. V. *Remarks on the Chronic Fluxes of the Bowels.* By N. Chapman, M. D.

Not a little diversified are the symptoms of this pathological condition, though in nearly all instances the bowels are very irritable, and consequently excited by the slightest causes. The stools may be small and of mucus, sometimes tinged with blood, or containing fragments of lymph, or are glairy or gleety—or exceedingly copious, and of a light clay colour—or dark and granulated like coffee grounds, or resembling greasy water, and of a cadaverous odour—or are seemingly of putrid chyme, or pulpy, mixed with ingesta, very frothy, and of divers hues, though usually of an ashy or slaty aspect, and are attended by more or less tormina and tenesmus or straining, or come away at once in a gush, or by a sudden ejection or squirting without any uneasiness.

The mode of evacuation depends much on the character of the stools—slow and difficult when they are small and tenacious, and the reverse if large and watery. Little appetite exists, or it is very capricious, and the food taken is seldom thoroughly digested. The tongue is heavily furred in the centre and at the root, with florid tip and edges, or red and raw throughout, as if scalded—or with scattered superficial ulcers on it, and the inside of the cheeks and lips, or down into the fauces—or it is pallid, attenuated, and flaccid. The skin is dry, furrowed, and of a dingy white or sallow, or leaden hue—the eyes sunken, with a shrivelled and meagre expression of countenance. Tenderness of the abdomen is felt on pressure, though not uniformly, and it is tumid or the contrary, lank, relaxed, or even collapsed. Borborigmus is very troublesome. The pulse is often contracted, hard and accelerated, with an irregular febrile movement, especially in the evening—but it may be natural, or very diminutive and feeble, with low temperature of the surface, or while the extremities are cold, the belly is preternaturally hot. Emaciation advances rapidly, with corresponding debility, till finally the individual sinks from absolute exhaustion, death being preceded by œdema of the lower limbs, apthæ of the throat and mouth, redness and ulceration around, or within the verge of the anus, and the Facies Hippocratica strongly marked. The duration of an attack is very various, from a few weeks to months or years, subject, when long continued, to alternate remissions and exacerbations.

Chronic fluxes may be an original affection, or the consequence of an acute attack, protracted by neglect or ill-management—and when

of the former or primary nature, are assignable to many of the causes of the latter, operating less actively.

They are undoubtedly induced by malaria, whether the vitiation of the atmosphere be owing to the effluvia of vegetable or animal decomposition, or other offensive impregnations—scarcely less so by the excesses or variations of temperature, particularly moist, austere weather, and by the occupancy of cellars and other damp confined places.

As much, perhaps, may be ascribed to the direct irritation of the primæ viæ from aliments or drinks, such as tainted or tough indigestible meats, sour or mouldy bread, or crude or decayed vegetables or fruits, the intemperate use of ardent liquors or bad water, putrid, or charged with adventitious matters.

They result, too, from the long persistence in purging with drastic articles, as is practised by some for the removal of diseases, and above all dropsy, of which I have seen repeated instances, and by whatever indeed is calculated thus to worry the bowels into a state of exasperation, or to destroy their tone, or otherwise throw them into derangement. It is in this way, I have little doubt, that the horrible abuse of mercury throughout a considerable extent of our country concurs in the production of similar mischief. Nothing is more irritating to the alimentary tube, the liver, and to the whole of the abdominal viscera, than this very article, unless cautiously regulated—and when we advert to the indiscriminate and exorbitant employment of it by confessedly too many of the practitioners in the region to which I have alluded, the conjecture advanced, seems scarcely to require any confirmation.

Nor must the exanthemata be omitted in the enumeration of causes. These have their origin in the mucous membrane of the alimentary canal—and the translation to the skin not perfectly taking place, leaves behind an irritation productive of this effect, as is strikingly exemplified in scarlatina, measles, &c. Chronic eruptions of different kinds receding from the cutaneous surface, occasionally operate also in the same mode, two instances of which I have seen.

Certain sections of our country are singularly liable to the disease, and it prevails to a great extent, especially at or near Richmond and New Orleans. Cases of it I have annually from each of these cities, and am assured that it is one of the most terrible of their maladies: no age, sex, or condition of life is entirely exempt from it, though it rarely occurs before puberty. What occasions it, is not ascertained: nothing peculiar about Richmond exists to which its production can be referred, but at New Orleans the popular notion connects it with the use of the turbid waters of the Mississippi. Never having seen

a case in the early stage, I am not able to describe it from any knowledge of my own, but I learn that it usually commences with the symptoms of dyspepsia. As it has come before me, the disease was far advanced, and only distinguishable from more common diarrhœa, by less emaciation, the flesh and integuments being rather flaccid than wasted, and by a peculiar sallowness of skin, more of the light lemon than the orange hue, and by the number and copiousness of the discharges, which invariably resemble pale clay or Fuller's earth dissolved in a quantity of water.*

Chronic fluxes are moreover of a secondary nature, from the extension of irritation to the bowels of other diseased organs, as the stomach, liver, spleen, pancreas, kidneys, uterus, the lungs—and I have seen it occasioned by hæmorrhoidal tumours or ulcerations at the termination of the rectum.

No perplexity can prevail in the recognition of diarrhœa. It were highly important, however, in a therapeutic and practical view, could we discriminate the several states of the bowels on which the discharge depends—but I am apprehensive we cannot do this with any uniformity or precision. Neither the symptoms nor the appearance of the stools may be relied on under all circumstances. Generally, however, inflammation is denoted by pain in the abdomen, hot skin, corded, frequent pulse, and by slimy, membraniform, or bloody dejections. But on the contrary, how often is there pain without phlogosis, and ulcerations and other lesions are to be met with, where no expression had been given by this or any more distinctive sign of their existence?

Genuine mucous or serous discharges, though ordinarily indicative of simple irritation or phlogosis, are occasionally found in every variety of case—and even the most copious effusions of blood, the common product of phlogosis, may be owing to merely a turgescence, or perhaps relaxation of vessels.

Gleety stools usually denote a subdued state of previous inflammation—though not always, they sometimes proceeding from an ulcerative condition. Chymous dejections are more uniformly significant of an imperfection in the digestive powers of the colon, or in other words, the process of fœcation.

* Diarrhœa of a somewhat different kind appears to be hardly less frequent among our Eastern population, especially that of Boston, the source of which is as little intelligible. But the individuals whom I have attended with it, in their passage through this city to the South, all concurred in stating that the attacks were ushered in as dyspepsia, followed after a long interval, by the bowel affection, then cough and other pectoral symptoms, marasmus, hectic fever, &c.

Evacuations thin, greasy, and of a cadaverous odour, mixed with sanious, purulent, or fibrinous matter, are to be deemed, in my opinion, the least unerring criterion of organic mischief. But this test is also fallible, having seen extensive lesions of the same kind, with stools of the earth-like solution I have just mentioned.

In a disease so various in its character, and occasioned by such diversity of causes or conditions, the grounds of prognostication must necessarily be vague and uncertain. Not much more can be determined, than that in proportion to the duration and severity of the attack, the degree of constitutional disturbance, emaciation, and debility, is the prospect of a cure or otherwise. What is to be deduced from the aspect of the stools, I have previously stated. Cases with mucous or gleety discharges are usually the most curable, and those earthy or watery, and of cadaverous smell, the least so.

From autopsic inspections, evidence is afforded of inflammation in its several gradations, in the mucous coat especially, confined to a part, or embracing a considerable extent, and sometimes every variety of organic injury, from the simplest to an entire change of structure, the most common of which, however, is ulceration. This consists of a single ulcer, or a few only, though often innumerable. Cases have repeatedly been examined by me, where it was as impossible to count them as the stars in the firmament. Large portions of the bowels are, indeed, sometimes found cellulated like a honey-comb. The ulcers are of various sizes, from that of the head of a pin to an inch or more, and have a close similitude to the venereal chancre. Connected with these or independent of them, mere vegetation, or fungous excrescences are occasionally to be met with. I once opened a subject who died of the disease, where a fungoid growth in the colon was discovered, nine inches in length, two in breadth, and half an inch in thickness. But in other instances, the mucous surface seems to be scalded, as it were, here and there a vesicle or superficial sore, or more decidedly apthous, in the whole, analogous to the state of the tongue, mouth, and fauces, which I have noticed.

An extreme attenuation of the intestinal parietes is a further occurrence. Bonnet tells us that he has seen the bowels as thin as a cobweb; and, in one instance, I found the ileum and part of the colon so wasted away, that with a delicate arachnoid peritoneal covering, a few fibres of the muscular tissue were only left, pallid and widely separated. This atrophy oftener happens than is suspected. Moreover, though sometimes the mucous coat may appear sound, tubercles are concealed in the cellular texture under it, by which it is irritated to undue secretions, precisely as such extraneous bodies in

the same tissue of the lungs provoke their mucous surface to inordinate discharges. But though some of these lesions are usually to be detected, it can scarcely be doubted that the intestinal fluxes may prevail independently of them or any others appreciable.

Morgagni has transmitted the history of several cases without the slightest phlogosis, the individuals sinking, as it were, in a very short time, from the exhaustion of excessive serous effusions, in one of which, forty pounds of limpid fluid were evacuated in a day. The same kind of testimony is borne by Louis, who states that he had several times found the mucous coat only changed by becoming preternaturally pale, flabby, and relaxed. Confirmatory of all this, it is reported by Andral, that he has frequently noticed the mucous membrane of the intestines, especially in children, perfectly white, with its natural thickness and consistence, both in acute and chronic diarrhœa. But it is highly probable, in most of the instances where the bowels have been represented as exempt from organic derangement, that the irritation productive of the discharge was sympathetic only—derived from contiguous or remoter parts, one or more of the abdominal viscera or the lungs, these organs, or some of them, being often found deeply affected.

Of the diarrhœa which I have represented as incident to sections of our southern country, the prominent appearances are, so far as I know, softenings of the mucous texture, an infinity of ulcers, and, perhaps, diminution in the size of the liver. Three subjects only have I had opportunities of inspecting, and such were the lesions chiefly observable. The liver in two of them was exceedingly reduced, and of a dingy white—in another, the stomach exhibited a partial ramollescence, and, in the third, with extensive ulceration, principally of the ileum, the mesenteric glands were enlarged and indurated.

The pathology of the disease might, perhaps, be sufficiently collected from what has now been detailed, and my further reflections on it will, therefore, be very brief.

Touching the immediate seat of the affection causing these fluxes, there is some division of opinion. By some, it is insisted that constipation is uniformly dependent on phlogosis of the small intestines, purging only occurring when the colon becomes implicated. True in the main, this is erroneous as a universal proposition. Even irritation of the stomach, much less of the upper portion of the intestinal tube, simply from ingesta, is productive of it, as is particularly exemplified in Lientery. Louis maintains that the seat is most frequently in the cœcum, next in the colon, and least in the rectum. It would seem,

according to our own dissections in this city, to be in and about the ileo-cœcal valve, in the largest proportion of instances.

The discharge in all the profluviæ was once considered as constituting the disease itself, occasioned either by a depuration of certain peccant humours through the solids, or a colliquation of the latter into a fluid. But such hypothetical crudities are no longer entertained, and to them has succeeded the doctrine, that all these discharges are owing to a vitiation of the secretory process, immediately dependent on some change of condition in the organ, and which change may be functional or structural, and of divers gradations and kinds. Granting the general correctness of this doctrine, it still remains to inquire more precisely into the conditions affirmed.

That a vast increase of a discharge may take place from the mucous membrane, independently of any apparent lesion, is shown by the post-mortem evidence I have cited, and as certainly, from the cutaneous cellular and serous tissues. As the skin sweats, so may these eliminate their respective fluids in excess. But, here there is usually some excitement and turgescence of vessels. The discharge happening from metastasis, the same condition probably exists. Thus, when the skin, under the influence of cold, ceases to perspire, and the bowels assume vicariously the office, there is in them an exaltation of action, corresponding to the loss sustained by the dermoid membrane. Exactly what the one loses, the other gains, to be added to its natural portion of excitement. This may be deemed irritation only—and of the connexion of these fluxes with phlogosis and organic lesions, no one doubts. Do they, however, occur in the absence of these several states? The theory of hæmorrhage and dropsy will equally embrace the present case. Like the sanguineous or serous discharges, that form the mucous coat may be referred either to an active or passive state. But, perhaps, a still more pertinent illustration may be had in the analogy of colliquative perspiration. A hæmorrhage or hydropic effusion, or such cutaneous transpiration, is met with in the lowest prostration of vital energy, and so is diarrhœa, each caused by relaxation of the exhalents, and all requiring for their cure astringents, tonics, or other means of invigoration.*

Establishing this distinction as a leading principle, its exceptions and limitations will hereafter appear in the treatment of the disease. But previously to entering on this, I wish to remark, as a conclusion, from all I have said, that the discharge itself is merely an effect of

*The work of Andral on Pathological Anatomy, has a chapter on this subject, abounding in facts and the most interesting views, which may be consulted with the greatest advantage.

an abnormal condition of the bowels, the ascertainment and rectification of which, constitute the real objects of cure. To determine, however, the exact pathology of the case, we have seen is very difficult, and, so long as it remains in such obscurity, the practice must be somewhat tentative and empirical. Nevertheless, in the want of more perfect information, we may be guided, in part, by the character of the stools, and still more, by the general state of the system.

The pulse being tense or corded, with pain and tenderness of the abdomen, aggravated by pressure, florid tongue, and not extreme weakness, we can scarcely err by a resort to venesection, the propriety of which, indeed, is attested by ample experience. To Sydenham, in his account of the diarrhœa of measles, we are indebted for this great practical improvement, and which is not the least of his valuable contributions. Claimed recently as a discovery, it may have been overlooked or disregarded by others, though not by the practitioners of this city. From the time of my connexion with the profession, such, at least, has been the plan of treatment of every description of inflammatory bowel affection, chronic or acute. Nor, will a single bleeding, however copious it may be, always, or even generally suffice. Chronic inflammation, though not so immediately dangerous, has a much stronger hold of a part than recent, and accordingly proves more difficult to dislodge or subdue. Not discouraged, then, if no very striking advantage accrues from the first bleeding, in such cases, let it be repeated every two or three days, while the pulse and strength warrant the continuance, and we cannot fail ultimately to be well satisfied with the consequences. Certainly, in some instances, I have bled from ten to fifteen times, taking away four, six, or eight ounces of blood, each operation, and found it essential to the cure. Topical bleeding is a very important auxiliary to venesection, sometimes superseding altogether the necessity of it, where the means of accomplishment, which is seldom the case in country practice, can be conveniently obtained.

The inflammatory state having been overcome, gentle emetics of ipecacuanha, exhibited occasionally, may be useful. They are not prescribed here as evacuants, though not always without advantage in this respect, as to renovate, by instituting a series of new actions, the condition of the whole alimentary canal. Nor in their immediate operation, by arresting the peristaltic motion, are they without good effect, and perhaps not less so by inducing a determination to the dermoid surface. In the management of this disease, it is of the last importance to restore to the skin its healthy functions, for, till this is accomplished, no decided and permanent impression will be made.

Great benefit accrues from the frequent use of the warm-bath with this view. To command, however, its full effect, where the skin is dry and the capillary circulation torpid, some stimulating article should be added to the water, as salt, and, on the patient entering his bed, he is to be rubbed with a flesh-brush, till a universal glow is diffused over his body. The bath being not readily commanded, a stimulating pediluvium or friction with fine warm salt, may be employed as a succedaneum—and further to promote the effect, a small dose of Dover's powder will prove serviceable. During the day, a pill may be given, every two or three hours, composed of a small portion of torrefied rhubarb, ipecacuanha, and opium. The ipecacuanha, on every account, is singularly valuable in this disease, though there are some who prefer the antimonials, and especially the cerated glass of antimony, with opium—a preference, I suspect, without any just foundation.

These medicines having been tried unavailingly, we may next resort to alum, which is much prescribed in the form of whey. My mode of directing it, however, is in the dose of two, three, or four grains, to a quarter of a grain of opium, several times in the twenty-four hours. In some instances, a small portion of ipecacuanha may be added, and especially if the skin continues dry, and the bowels harassed by griping or other uneasiness. By Mosely, a combination of alum and white vitriol, called by him the vitriolic solution, has been greatly extolled in chronic dysentery and diarrhœa. Of this, I cannot say a great deal, from my own experience, having been discouraged from any extensive use of it, by its very disagreeable taste and nauseating effects. Entitled to greater regard, is a union of alum and the sulphate of iron in equal portions, say a grain or two of each, occasionally repeated, with or without opium, as the indication may be.

The acetate of lead, with opium and ipecacuanha, has strong claims to attention, and the camphorated mixture, with nitrous acid and laudanum, is of late strongly commended, though, I think, undeservedly.* In some instances, particularly where the liver is concerned, the nitro-muriatic acid internally or as a pediluvium, or by frictions, has certainly proved of service. It ought, however, to be cautiously used, and its effects carefully watched. Even when endermically applied, I have known it, in several instances, to bring on the most distressing dysenteric affections.

Contrary to common opinion, by which they are forbidden, I have

*This is called Hope's mixture, from the author of it, and is prepared as follows,—the dose of which is a table-spoonful, several times a day: ℞. Mist. camph. ℥viij., acid. nitrous. ʒj., tinct. T. heb. gtt. xl.

seen the vegetable acids eminently beneficial. Diluted vinegar I allude to especially, though lemon juice sometimes also answers.

Much the most, on the whole, however, may be expected from the use of mercury. This is an indispensable remedy, when the case is associated with hepatic derangement, and even if such do not exist, it proves serviceable. Calomel or the blue pill is given in minute doses with opium, and sometimes ipecacuanha and prepared chalk, to attain the alterative, and not the salivant effect.

By the unanimous voice of practitioners, blisters are declared to be of the greatest utility at this conjuncture, which are applied to the abdomen or the extremities, and may be alternately put on the ankles and wrists. The principle on which they act, in the latter instance, is that of revulsion.

Chronic fluxes, with such discharges as to constitute merely a gleet of the bowels, are most successfully managed by the balsamic and terebinthinate preparations. The copaivæ I have often used advantageously; also the spirit of turpentine, and sometimes, even more so, common rosin, in the dose of four or five grains several times a day. Cubebs, repeated in the same dose and manner, I have known to be serviceable.

The bowels being ulcerated, which may be suspected from the appearance of the discharge, the balsams and terebinthinates are thought also peculiarly adapted. Not a little has also been recently said of the nitrate of silver, as well as the sulphate of copper. But, whatever may be their utility, the principle on which they are applied, is surely erroneous. It having been found that ulcers of the external mucous surfaces when touched by either of these articles, are disposed to heal, it is presumed that given internally, they might have a similar effect, by coming in contact with the intestinal ulceration. This is sheer nonsense, and it is really inconceivable how the notion came to be entertained, that the fourth of a grain, which is the ordinary dose of these articles, covered up as they are in some other matter, in a pill, the only mode of exhibition, could thus operate, and especially on so wide a spread surface as usually exists in the case.

Not much is to be expected from any treatment in this ulcerated state. Except in two instances, never have I seen a cicatrix in the bowels, extensively as post mortem examinations are conducted in this city. But facts of the kind are reported by Latham, of London; and among the French, by Petit, Billard, Andral, and Troillet, the latter of whom has presented an example of ulceration, where there were marks of incipient, advanced, and complete cicatrization.

Next I am to make a few remarks on that species or variety of the

disease supposed to depend on debility or relaxation of the intestinal exhalents. It may be the final stage of the inflammatory flux which I have already described, and it is to be met with, as a primary state of the bowels, among very emaciated and infirm people, either from age or other causes, or as symptomatic of consumption, &c. These cases, however, are exceedingly deceptive. Much general weakness may exist with a high degree of local irritation or phlogosis, or even ulceration. To determine this point, previously to entering on the treatment of the case, is of great consequence. Being satisfied, however, that no such conditions exist, the indication becomes simple, pointing directly to the restoration of the tone of the primæ viæ, and to this end, the whole catalogue of tonics and astringents is sometimes exhausted. The use of them, however, is hazardous, and for the most part inefficient, so that they are comparatively seldom employed by me, and uniformly with the circumspection which a distrust of their propriety creates, though undoubtedly, a state of the bowels may prevail, to be cured by this description of means. Experience teaches this, and we have the further evidence of their efficacy in similar atonic affections of the mucous surfaces of other parts, as of the urethra, vagina and lungs, gleet, leuchorrea, and some varieties of bronchitis. Nevertheless I repeat, that the course must be experimental in a considerable degree. There is one source of illusion, which ought not to be overlooked. It happens that the evacuations may be suddenly checked, and relief presumed to be effected. The remedy here excites the muscular coat of the bowels into spasmodic contractions, preventive for a time of the escape of the fluid, soon followed by tumidity of the abdomen, a distressing sense of distension, often some colicky pain, and ultimately the discharge bursts forth with increased violence. An occurrence of this sort, ought to be received as an admonition of the impropriety of the practice, and of course to its discontinuance. But the effect being otherwise or really beneficial, then any or the whole of the astringents, mentioned under a preceding head, may be recurred to, and these not succeeding an appeal must be made to some of greater power.

An infusion of galls alone, or in various combinations, particularly with prepared chalk and laudanum, is much prescribed in this atonic state of the bowels. The Syrup of galls made in the following mode, is also occasionally directed. Two drachms of the powder of galls, are to be infused in a gill of brandy sweetened, and then set fire to the liquor, and let it burn out, of which a teaspoonful is the dose. Nearly of equal power is the kino. It may be given in powder, or watery solution, or in tincture—though it is most efficient in tinc-

ture, with prepared chalk and laudanum. The dose is a table-spoonful occasionally. Nearly of similar properties is the catechu, which may be exhibited in a similar manner.

As a mere astringent much has been said of logwood. It is given in decoction or infusion. The tincture of rhatany, however, has a still higher reputation. An infusion of the bark or flowers of the pomegranate is worthy of trial. Equally so is the cinnamon, and particularly the clove tea. I have also, sometimes witnessed very good effects from the compound tincture of rhubarb with laudanum in small and repeated doses.

By our own country we are supplied with several active astringents. The only one, however, I have employed, and which I think is equal to any of the vegetable astringents, is the dewberry root, *Rubus trivialis*, in decoction. Combined with astringency it has an aromatic flavour, which reconciles the stomach to it, and hence is rarely rejected. The bowels, however, are commonly very much ulcerated, and under such circumstances little is to be hoped. As a palliative, an opiate injection occasionally renewed, is here more effectual than any other remedy.*

Regarding the diarrhœa in those districts of our own country, formerly mentioned, I have to make only a single suggestion. The preceding remedies, so far as I have remarked, are equally adapted to it, the one or the other to be selected according to the existing condition. But since it seems to originate in local influences, the propriety of an immediate removal beyond their noxious sphere is obvious.

This is the medical management of primary fluxes, having hitherto only referred incidentally to the secondary form of the affection. But there is no difference so far as concerns the bowels, the main object being to detect and remove the parent disease, whence is derived the intestinal irritation, of which the discharges are the consequence. The treatment, however, of the lesions of the organs to which I allude being foreign to the present occasion, I shall not at present expatiate on the subject. It must suffice to mention singly, which I am induced to do, as perhaps less apt to attract attention, that these fluxes are far more frequently than suspected to be found in connexion with some irritation at the extremity of the rectum, operating either as the original or aggravating cause—and that whatever may be its nature, it is very important to get rid of it without delay.

*But the application of a blister over the abdomen, so long as merely to produce rubescence of the skin, will sometimes mitigate the irritation, and temporarily suspend the discharge.

We come now to the consideration of regimen, on the due regulation of which every thing depends.

As to diet, it is usual to select those articles supposed from their astringency to bind the bowels, which I think is a mistaken notion, derived from the false doctrine that the discharge constituting the disease—the great purpose in the cure is to restrain it. The indication, on the contrary, is to soothe irritation by the blandest nutriment, thus making it harmonize with the other parts of the treatment. It is customary, as having this property, and by which they are so well adapted, to commence with the mucilaginous or farrinacious matters —that of gum arabic, the slippery elm or the benne, and tapioca, sago, sallop, arrow root, rice, flour, &c. Gruel and thin broths, though usually proscribed, from an apprehension of their running through the bowels, I have found, on the same principle of allaying irritation, very appropriate. We direct them in cholera morbus, and why not in the present case? Milk, on some occasions where the stomach is not sour, answers very well—and perhaps no article more uniformly agrees with the patient than buttermilk.*

Digestible solids, as mutton, or fowl, or game, or oysters, raw or slightly roasted, may subsequently, on the abatement of irritation, be allowed—and I have seen benefit from an occasional indulgence in a small portion of ham or salt fish under similar circumstances.

Crackers or stale leaven bread are only proper. Fruit I have sometimes known to be appropriate, particularly peaches. The dew or blackberry has a large share of popular confidence in this respect, to which it is not more entitled than strawberries. These, and I may add oranges, habitually and almost exclusively used, have cured the disease. Mentioning on a former occasion some cases to this purport as regards the latter, the physician-general of the British forces in Canada, who happened to be present, informed me that his wife, having suffered from diarrhœa for a long period, during which she had visited Europe and received there the best medical advice without avail, was finally cured by living entirely on oranges, to which she was prompted by an irresistible instinctive desire. Yet generally fruits disagree, or prove as injurious as the common vegetables. The best drink at first is rice or barley-water, or some similar article, and brandy and water or port wine in the advanced atonic stages. Neither much food

* Milk may be given alone, or thickened with some of the farinaceous matters mentioned above, the best of which is wheat flour, thus prepared:—Enclose in several folds of linen half a pound or more of it, drawn tight into a ball, and then boil it for several hours in a pot of water. On cooling it becomes hard, and must be grated into a powder.

nor drink should be permitted at a time, it being very apt at once to run through the bowels, nor the latter be very cold for the same reason.

Many of the cases of diarrhœa, and especially of long standing, may be considered as materially dependent on dyspepsia, and hence all the dietetic rules in relation to that affection are to be observed, together with a recurrence to the ordinary remedies for its removal.

No one questions the necessity of preserving an equable temperature on the surface in the intestinal affections, and among the best means of securing it is a flannel roller, while at the same time by its compression, further and more decided effects are attained. Equally important is it carefully to protect the feet—these, when cold, hardly ever failing to revive or exasperate the affection.

Exercise has been greatly insisted on as a curative measure: but whether it operates for good or evil, will depend on its being properly timed. During the continuance of any activity of phlogosis it must be avoided—absolute rest, even in the recumbent posture, having the most beneficial influence under such circumstances. It is indeed, in many instances, the *sine qua non*, or without which every thing else will prove nugatory—while, in an opposite or atonic condition, taken in any mode it is eminently serviceable, though more so on horseback, and particularly if it be extended to a long journey. More than one of our watering places, the White Sulphur and Warm Springs of Virginia especially, are deemed very efficacious, and hence may be worthy of trial.

Even, however, if all these expedients fail, we are not to abandon the patient. As a last resort, a sea voyage to some temperate climate should be recommended. This is a very important measure, and will sometimes succeed when all others have proved unavailing.

It is matter of great moment to remove these fluxes. Exhausting as they may be in their immediate effects, they are connected with pathological conditions, which become aggravated by delay, leading too often to the saddest catastrophe. Looking at some of the results only, "the bowels," says a late writer rather quaintly, "being unfaithful to the stomach, and, instead of playing fair, let go their hold of the *pabulum vitæ* before the lacteals have properly performed the process which that grand organ has prepared for them, nutrition must be deficient, and the consequences of inanition ultimately take place. Nor," continues he, "does the mischief stop here. Locke tells us that people with relaxed bowels have seldom strong thoughts or strong bodies. To a certain extent this may be true, and it is one of the numerous instances illustrative of the ultimate dependence of our moral on our physical condition.

ART. VI. *Reports of Cases of Insanity, treated at the Friends' Asylum, near Frankford, with Remarks.* By CHARLES EVANS, M. D. Attending, and R. R. PORTER, M. D., Resident Physician of the Asylum.

Formerly, delusions of the understanding were thought to be essentially connected with the manifestations of insanity; and frequently, at the present day, in judicial investigations of alleged crime, errors of judgment are made solely to constitute the disease. The intellectual powers, however, in many instances, experience little or no enervation, while the moral character undergoes partial or complete transformation. Persons thus affected, are led by an irresistibility of feeling, to the commission of acts which they know, and often confess to be wrong; they can understand a proposition, view its relations, and arrive at correct conclusions; at the same time the most unnatural perversities in disposition, feeling, and propensity are exhibited. Those habitually neat in person, become utterly careless; the innocent, mischievous; the pious, profane; the meek, haughty; the silent, loquacious; the modest, forward; the benevolent, cruel; the confiding, suspicious; the cheerful and gay, sullen and sad. The forces of filial affection are frequently reduced or entirely suspended; occasionally their exaltation is the first admonition of an approaching attack.

To define cases of this character, Dr. Prichard has used the term *moral insanity*, and describes it as "consisting in a morbid perversion of the natural feelings, affections, inclinations, temper, habits, moral dispositions and natural impulses, without any remarkable disorder of the intellect or knowing and reasoning powers, and particularly without any insane illusion or hallucination."

Pinel, at one time, thought that insanity was inseparable from delusion; but after experience and observation convinced him that some cases were unattended with lesions of the intellect. Of these cases, he remarks, their ideas were clear and connected, they indulged in no extravagances of fancy, they answered with great pertinence and precision to the questions that were proposed to them.

Dr. Rush also treats of derangement of the moral faculties under a distinct head, and adduces several examples which prove that insanity may consist in a change of temper, feeling, habit, or propensity, rather than in a disorder of the reasoning powers.

Deteriorations in disposition similar to those above mentioned also attend other varieties of derangement, but the intellect being involved, the disease no longer comes under the head of moral insanity.

CASE I.—*Moral Insanity;* paternally constitutional. Duration* 24 *months. Cured.*—L. R., of Philadelphia, an unmarried lady, aged 25, was admitted on the 4th of February, 1835, labouring under a second attack—cause, "religious excitement." She has two sisters deranged. She has undergone little change since her admission; at first was freely depleted by cups to the head, afterwards tonics were given.

May 11th, 1835. Physical condition—emaciation advanced, stature small, head less than average, muscles small, hair and eyes black, complexion dark, motion quick. Wakeful at nights; scalp pleasantly warm, feet also; no cephalalgy or maniacal cast about the eyes, pupils contracted; lips very red; tongue slightly furred with white, papillæ enlarged and reddened; anorexy; bowels regular, no abdominal tenderness; pulse small, about 70. Catamenia suspended; excrements passed in bed.

Moral phenomena—*utterly careless in dress,* mischievous, not malicious; at times joyful or sullen, breaks every thing of a frangible nature, destroys her dress; habits filthy, when reproved is abashed, and says "I will try to do better." Conscious of the impropriety of conduct, yet cannot correct it. She manifests no illusion of the understanding. Since the 25th of April has been taking tr. canthar. and carb. ferri.; gtt. xxx. of the former and ʒi. of the latter, three times a day. Diet, black tea, bread, and animal soup. Hands are confined by leather gloves.

21st. Head warm before, no pain, countenance variable, lips not so red; bowels regular; abdomen distended, hard, not tender; appetite bad; pulse about 70. If disposed, can give correct statements of her feelings; filial affection suspended; by turns cheerful and testy. When permitted to mix with other patients she indulges in all kinds of petty mischief, to their great annoyance. At night returns to her filthy habits. Stop the tincture and continue the iron.

June 13th. She has been more excited since the summer commenced, and uses much profane language. On the 4th inst. the iron was suspended.

28th. Sleeps better; scalp warm in front; pupils contracted; tongue coated with white, papillæ enlarged; appetite better, bowels regular; pulse small and weak. For several months has daily torn her dress, at present rather more careful through the day of her appearance—still mischievous, continues to destroy the bed clothes. On the 25th tart. emetic ointment was rubbed over the scalp; the pustules are appearing. Ordered sulp. morph. gr. ss. three times a day.

* This term is used merely as opposed to intellectual insanity.

July 6th. Sleeps well; heat of scalp normal; pupils contracted; face cool; hands and feet cold; pulse small, feeble, 72; nausea, occasionally vomiting, bowels confined. She is now allowed the liberty of the day room, and generally her conduct is decorous. Lately saw her father, was delighted, though she had seldom spoken of him. Last night she was noisy, but kept her room in order for the first time since her admission. Ordered pil. hydr. grs. iii., and in four hours give oil ℥ss.; it operated freely—discharge palish yellow, consistency proper. Eruption on head healing; hands liberated; continue the morphia.

16th. Sleeps well; eyelids sallow; tongue more furred; pulse stronger. Since last note has thrown up several times, bowels regular; becoming more careful of her person and chamber. The morphia was stopped on the 12th on account of gastric irritation, and pil. hydr. grs. ix. were given, followed by oil ℥ss.; since then she is more talkative, and childlike in action. Recommence the morphia.

27th. Appetite good, though she has frequent attacks of vomiting; complains of pain under the clavicles; no cough; respiration thin, loud; percussion resonant; pulse 80; hands warm; feet cold; irritable through the day, wakeful at night. The morphia was suspended yesterday; ordered ⅛ of a gr. to be applied over a blistered surface, and give pil. hydr. and rhei. āā. grs. vi.

Aug. 4th. The irritability of stomach continues. She has her room in confusion—sings, cries, and scolds. Give ⅙ of a gr. of morphia as often as can be borne.

11th. Sleeps badly; scalp warm in front; pupils much contracted; eyelids more sallow; tongue clean, lips red; pulse 72; skin of body cool, no abdominal tenderness. For several days towards evening has had febrile symptoms, which go off about midnight with profuse perspiration. Captious; negligent of room and person. Cupped over stomach ℥iv.; ordered morphia to be stopped, and reduce diet.

22nd. Fever continues, with morning remissions; sleeps badly, pulse frequent, stomach irritable, feet swollen. She is less irascible; has, however, frequent spells of crying and fretting; reads and sews. Ordered her to be cupped ℥vi. over the abdomen, and give pil. hydr. grs. ii., ipecac. gr. ¼, and repeat at intervals of two hours.

24th. Fever abated. Stop pills, and give gr. ⅙ of the anodyne.

Sept. 4th. Heat of skin pleasant, sleeps better, pupils contracted, pulse tense, 100; swelling of feet subsided. Yesterday had diarrhœa with vomiting; cough increased towards evening. Perfectly careful in dress; her room is kept in the neatest order. Continues the morph.

8th. Fever still present, morning remissions less perfect, sleeps badly, pupils more dilated, tongue clean, pulse 104, weak; cough

abated, bowels loose, appetite great. Cupped ℥vi. and takes neut. mixt. during the afternoon, and grs. ii. sulph. quin. hourly in the morning.

23d. Fever subsided; sleeps naturally, tongue clean, pulse frequent, bowels regular, appetite voracious, increasing rapidly in flesh; menses appeared to-day. She is now the most careful patient in the house of dress and person—a blemish on either is immediately corrected. Abounds in gratitude; regrets over the past, and declares her actions could not be controlled. Walks and rides out daily—takes no medicine.

Oct. 12th. Discharged.

Remarks.—The utter disregard to personal appearance, the want of filial affection, the great propensity to indulge in mischief and profanity, are the most remarkable traits seen in this case. For *several months* they seemed uncontrollable, and beyond the influence of remedial measures. The first notable signs of improvement were the return of natural sleep and appetite, together with an increase of flesh, all of which symptoms we regarded as highly favourable, inasmuch as they were accompanied with an amendment in the moral phenomena.

There was observed in this case a constitutional excitability, or habitual restlessness, which particularly called for the exhibition of anodyne medicines. Could any method have been devised for administering the morphia without nauseating the stomach, the cure doubtless would have been effected more speedily.

Beside the happy effect of opium or its preparations as an anodyne, it appears to exert considerable influence in equalizing the circulation throughout the system. There is not unfrequently great disparity in the relative proportions of venous and arterial blood present in the brain, or the circulation is much more rapid or languid in that organ than in other parts of the system; under such circumstances, if no positive inflammation exists, opium or its salts will often be found most valuable remedial agents.

Case II.—*Duration* 24 *months. Cured.*—S. S., of Philadelphia, was admitted on the 18th of June, aged 23, unmarried; second attack. She is a daughter of a respectable and industrious mechanic, much beloved by her parents, both of whom represent her to be naturally modest, amiable, obedient, and correct in her moral deportment: mental parts quick, not strengthened by culture. Her general health is good. At the age of thirteen years, she had an attack of "gravel," and for six weeks was melancholy, and in constant dread of dying; these feelings gradually subsided, but left her subject to occasional depression, which gave little or no uneasiness to the family. The re-

turn of the affection was first recognised by a change in temper and disposition. She became more peevish than usual, and in the performance of the common duties of life, showed a sullenness, strongly in contrast with her former amiableness. The irritability of feeling soon became so great that the least provocation induced immoderate anger. Her affection for friends diminished—employment was irksome, and her time was idled away. The disposition to scold was so constantly present, and so easily warmed into passion, that the peace of the family was destroyed. On these occasions persuasion was powerless, and she was intolerant of reproof. Restraint rendered her indignant, during which she would break glass, &c., and pretend to swallow the pieces, hoping thereby to intimidate her friends and regain her liberty. About five months prior to being admitted here, we saw her under great excitement at the hospital of ——, the physician of which remarked, that she had been admitted some months before, and was nearly restored, when improperly removed by her friends; but becoming unmanageable at home, they had lately returned her.

June 30th, 1835.—Stature short; body round, full; muscles compact; hair dark-brown; eyes hazel; complexion dark; head large; anterior developement full; motion quick; sleeps well, heat of scalp not augmented, no cephalalgy, countenance *sane*, pupils rather contracted, tongue slightly furred, appetite normal, no abdominal tenderness, bowels regular, pulse 80, heat of body natural, menses suppressed. *Forward*, captious, irascible, has frequent fits of anger without adequate cause; when she gesticulates, scolds and declares she will "play the devil if not cupped;" the eyes at these times are peculiarly piercing. In common conversation uses much profane language—affection for parents perverted; loquacious; habits clean, dislikes employment. Her gait exhibits a mixture of pride and of vanity. We can detect no illusion of the understanding: she rides and walks out daily. On the fourth day after admission she was cupped over the occiput, and the bowels were freely moved by epsom salts and magnesia. Ordered her to-day to lose ℥viij. of blood from back of the head. Diet vegetable.

July 2nd.—Ordered her to be cupped over the sacrum, to take aloes, and rhei grs. xāā. after the operation of which, to give tr. canth. gtt. xxiv. three times a day.

4th.—Increase the tincture to gtt. xxx. More excited; confined to her room.

7th.—Sleeps soundly; scalp cool; countenance generally pleasant; face oily; pupils contracted; lips red; face pale; tongue furred with white; bowels regular; has a distinct eruption over face and extremi-

ties; pulse 104, weak, small; feet warm; catamenia suppressed. She often reproves others for misconduct to which herself is prone. Disposition variable, suddenly passes from politeness to rudeness; has frequent irrepressible fits of laughter. Yesterday the tincture was increased to gtt. xxxv. Ordered ℥ix. of blood to be taken from the sacrum, and to keep her in her room.

10th.—Sleeps well; eye-lids sallow; pupils natural; skin of hands cool, moist; feet cold. The menses have appeared. She has been since the 7th more irascible and talkative, to-day she is much more pleasant and reserved, and remarks that she always repents of her misconduct. She has no desire to return home.

20th.—Complains of pain in the head, ordered v. s. vij.—syncope was nearly induced.

30th.—Scalp cool behind, warm in front and at the sides; brows contracted, face pale and swollen; pulse 104; skin of body cool; bowels regular; gait natural; affection for friends awakened; wishes to go home, and reward them for their love.

August. 2nd.—Pulse 108, ordered digitalis gr. ⅓, three times a day.

4th.—Pulse 96. Yesterday she saw her father, and expressed much joy; at his former visits she would not extend the hand of affection.

9th.—Scalp warm, pupils natural, tongue nearly clean, skin cool, pulse 90. Conducts herself with perfect propriety. Continue the pills night and morning.

11th.—Pulse 87; suspend the pills. 17th.—Discharged.

Case III.—*Duration* 8 *months. Cured.*—Miss H., of ——, æt. 19, was admitted on the 30th of June, 1835. In November, 1834, she had an attack of fever, accompanied with great determination of blood to the brain, for which she was bled, cupped, purged, and blistered; these measures, together with cold applications to the scalp, reduced the disease, and convalescence ensued; but, with the return of physical health, the moral powers were found deteriorated. She was "unsettled in mind," irascible, impatient of control, and regardless of truth. A great part of the time was spent in making calls, which were often protracted to most unreasonable lengths; occasionally till after the hour of midnight. She was ever ready to form new acquaintances, without proper observance to etiquette; to these she was familiar and confiding, while towards relatives a loss of affection was betrayed; they justly fearing that she might be seduced into some moral turpitude, determined to place her in the "Asylum."

August 4th, 1835. Stature large; body plethoric; muscles firm;

hair stiff black, eyes also; face large, complexion dark, florid; motion quick. Posterior developement of the head above the average, anterior full; heat of scalp increased, sleeps soundly, no cephalalgy, countenance animated, not maniacal; adnata clean; appetite normal; tongue slightly furred; pupils natural; no abdominal or spinal tenderness; pulse 100, strong, full; menses regular. She frets much about home at times; but, for the most part, is apparently happy, though her letters are filled with lamentable stories, such as, that she eats nothing, that her days are consumed in grief, and the nights are wasted in tears. She is bent upon mischief, to create which she has a ready imagination, and often violates truth. At first, liberty of the "halls" was allowed, but wherever she moved trouble followed—it gave her infinite pleasure to tantalize the irritable and to annoy the peaceable. Ordered her to be cupped over occiput, ℥ix.—the pulse was reduced in size and force, the frequency was increased; confined to her room; diet vegetable.

8th. Pulse frequent, tongue coated. Ordered aloes grs. xii., rhei. p. grs. x. The disposition to tease is so active, as to require constant seclusion; with an air of sympathy, she endeavours to conciliate the friendship of all, simply to betray their confidence; the monomaniac is upbraided for the strangeness of her delusion, the compliant are ridiculed for their obedience, and the incensed made more violent by her falsehoods.

11th. Sleeps soundly, no pain in the head, tongue clean, pupils contracted, pulse soft, skin of body pleasant, feet cold, catamenia are present; not so talkative; abuses every liberty. Confined to her room.

15th. Sleeps soundly, scalp too warm in front, no pain in head, adnata clean, skin moist, pupils contracted, appetite strong, tongue clean, bowels regular, pulse about 80. To illustrate the perversity of her disposition, we will mention the following incident. She having learnt that a patient was warmly attached to a gentleman, shortly after informed her that she had received intelligence of his death; as might be expected, this news brought on great anguish of mind, and for several days she wept much, and refused food; yet Miss H., wishing to protract the torture, advised her to order a *mourning dress.* Ordered her to lose ℥x. of blood from back of head.

22nd. Heat of occiput increased; expression of the eyes sane, face pale, sleeps much through the day, tongue clean, appetite great, bowels regular. She employs herself in reading and drawing. More obedient; promises not so often violated. Ordered her to be cupped ℥vij.

27th. Scalp too warm behind, pupils natural; liberty of the halls allowed.

30th. Her friends called to see her, and she pressed so warmly, that they were induced to take her home. Two weeks after this, we learnt that she seemed perfectly well.

Remarks.—However difficult it may be to classify the different diseases of the brain which involve the operation of the mental faculties, according to any precise nosological system, yet the line of demarcation between them, and what is denominated moral insanity, is sufficiently distinct to be recognised by every one who has paid sufficient attention to them.

The two last cases show the disease in its mildest form,—in them there were no erroneous conceptions of right and wrong, they readily assented to the truths presented to them, and acknowledged many improprieties committed. They often observed and censured the same course of conduct in others which they pursued. The friends of Miss H. remarked, that though she was sadly changed, they could scarcely believe she was labouring under insanity, which disease, according to their notions, was *always* attended with lesions of the intellect.

Persons affected with moral insanity, are often enabled to pursue steadily their usual avocations without the fears of their friends being excited to their real condition; any changes in disposition or habit are referred to eccentricity or singularity, till some adverse circumstance is encountered, when the entire moral character becoming perverted, or delusions arising, the case is no longer ambiguous; should it become necessary to place the government of their persons or estates into the trust of others, and the matter is brought before chancery, they are apt, by their pertinent answers and adroit questions, to impress the jury not only of their sanity, but that they have been persecuted by malicious selfishness.

The treatment of Cases I. and II. was regulated throughout, in accordance with as strict an interpretation of the pathological symptoms, as could be arrived at under the peculiar circumstances; and mainly consisted in frequent abstractions of blood from the scalp by cups. But it will at once be perceived how little information is afforded by the physical *signs*, of the seat or extent of that organic derangement which gave rise to a state of things so deplorable. On most occasions, the head is found cool and without pain, the abdomen free from tenderness; and its viscera, except when disordered by the medicines administered, performing their functions nearly as in health, and the pulse seldom differing very widely from its usual standard. So far as

the physical symptoms were developed, they throw light upon the existing state of the organs, of whose condition they are an index, and close attention to them is absolutely necessary for conducting the treatment to a happy issue. But in these cases, those symptoms of aberration from a normal state, generally manifested themselves *subsequently* to the primary lesion, which deranged the operations of the mind; and, as they occur in a thousand cases when no such derangement exists, they must be considered as accidental, and cannot be said to reveal the seat or character of the disease which produced the total cessation of healthy moral feeling. By what, then, are we to be guided in our search for the radical injury, and how are we to arrive at any correct conclusions relative to the extent and nature of that injury? Is it not by questioning the deranged manifestations of mind themselves, which, *se ipsos*, divulge disease either idiopathic or sympathetic in some portion of the brain, the organ through which the mind acts? And would they not, if we knew how to interpret them aright, point out the exact part implicated, and the specific character of the affection? If so, it becomes matter of interesting investigation, (which has already been prosecuted with partial success, and which we cannot but believe will lead to extensive practical results,) what class of deranged intellectual or moral phenomena are the accompanying symptoms of each disease of the brain and its appendages, involving the mental functions.

General Remarks upon the Connexion between the Uterine System and the Cerebral Functions.—Menstruation, doubtless, exerts great influence over the mental and bodily powers, both in a state of health and of disease; indeed, some persons regard its suppression as a frequent cause of insanity; our observation, on the contrary, affords no well-attested instance of the disease *happening* in a young female from this source. The occurrence of such cases is not doubted, but we believe it is much more rare than is generally supposed.

Whether the uterine system is primarily or secondarily affected, the connexion between it and the cerebral functions is intimate; for, when insanity is not confirmed by permanent lesions of the cerebral or meningeal structures, the renewal of the menses is one of the most favourable signs of approaching improvement, as seen in Case II. M. Pinel says that he has known, from the same cause, a demented girl suddenly regain her reason. In reading over the history of nearly one hundred cases, we found that the menses were suppressed in almost every instance of recent partial insanity; and, also, that in many cases the mental improvement was nearly simultaneous with their appearance. In moral insanity, the catamenia often remained unaffected,

and, when present, exercised little or no influence upon the moral phenomena, provided their flow was unattended with pain. (See Case III.) They did not come on till convalescence had considerably advanced in Case I., and apparently did not hasten the cure.

After the mental disease has existed for years, and all excitement, both nervous and vascular, have subsided, the uterine system regains partially or entirely its healthy tone, and the menses appear at stated or irregular intervals; this return of physical health, however, is to be regarded as unfavourable, if there is no correspondent change in the mental faculties.

Dysmenorrhœa.—The changes in temper and feeling which females undergo, at the menstrual periods, are considerable; they become listless, pettish, morose, and unhappy: not unfrequently the mental distress increases till life becomes a burden, and the wretched sufferer is tempted to seek relief from physical pain or moral anguish by self-destruction. Dr. Rush speaks of a lady, who was deranged at the menstrual periods only, during one of which she committed suicide. The cause of this attack and its unhappy termination probably depended upon dysmenorrhœa, inasmuch as bodily suffering, from other sources, sometimes produces insanity. Neither is it uncommon for the insane to be made more violent by painful applications.

We have frequently seen, during dysmenorrhœal periods, all the symptoms exacerbated, the heat of scalp increase, the pulse quicken, the eyes sparkle, the countenance become angry and daring, the tongue furred, and the bowels disordered. The patients are more turbulent, irascible, and revengeful; they attempt to injure others or themselves; their nights are spent in crying, or vociferating, and in destroying every thing about them of a frangible nature. When sufficient consciousness remains, or when they are disposed to give answers, they complain, upon being asked, of *pain* about the lower part of the abdomen or back.

Had these phenomena been referred to their proper source, there would have been no need in calling upon *lunar aid* to account for monthly exacerbations of maniacal disease, at least among females.

It is under such circumstances, that the insane, if they have ever shown any disposition to do violence upon themselves, require the most careful watching, for they are not only harassed by mental agony, but are tormented by physical pain, which reacts on the former, and makes life doubly miserable.

Frankford Asylum, August, 1836.

Art. VII. *Case of Spina Bifida; with Remarks.* By Charles Skinner, M. D.

Although the following case of spina-bifida terminated differently from what it was at one time hoped and believed it would, I am induced to make it public, from a belief that it will not be devoid of interest to the profession. It was treated while I was a resident physician of the Philadelphia Alms House Infirmary, at the request of Dr. Gibson, then the prescribing surgeon of that Institution.

December 5th, 1834.—Matilda M'Cormick, aged 17 months; very fair complexion, light hair, blue eyes, tolerably well grown for her age, and of a very sprightly disposition. Her mother states that, at birth, a tumour of the size and appearance of an ordinary blue plum, was observed on the inferior portion of the loins. On the surface of this tumour, there was a small excoriated surface, from which a sanious discharge took place. The tumour has increased very gradually, and is at present more than three and a half inches in length, two and a half in breadth, and one and a half in depth; and extends in the form of a flattened oval, from a line with the crest of the ossa ilia, to near the verge of the anus; but after crawling or crying it is much larger. It is diaphanous, and fluctuates very distinctly. The integuments are of a natural thickness and appearance, with the exception of a spot one inch in diameter, on the inferior portion of its surface, which is smooth, shining, and red, and resembles a cicatrix; but if the tumour be subjected to much friction, it becomes universally of a light pink colour. If firm pressure be made for some time, the tumour becomes so much diminished as to permit the opening into the spinal canal to be felt, which is smooth and oval shaped, with a small fissure extending downwards, is large enough to admit the end of the little finger, and appears to be caused by a deficiency in the last lumbar vertebra, or superior portion of the sacrum.

The health of the child has been uniformly very good; her appetite is excellent, and urination and defecation are performed naturally. She is very intelligent, and her head, though large, is not unusually so. She can sit or lie on the tumour, without the slightest inconvenience, and firm pressure produces no unpleasant symptoms. She cannot walk, but uses her lower extremities very freely in crawling, and can stand when holding by any object.

At the suggestion of Dr. Gibson, I punctured the tumour on the 7th with a very fine needle, but obtained only a few drops of fluid, when the orifice entirely closed. Two days subsequently, I repeated

the operation with a much larger needle, and drew off ℥j. of a perfectly limpid fluid, resembling pure water. The closing of the puncture again put a stop to the discharge of the fluid.

It then occurred to me, that by introducing a very small canula, the puncture might be kept open, and the discharge of the fluid commanded, without the risk to the patient being increased.

With this view, I directed a small silver canula, an inch and a half long and half a line in diameter, enclosing a pointed stilet, to be made.

In the mean time the child was attacked by varicella, which proved very light, but left two large ragged ulcers on the tumour, accompanied by diffused redness of its whole surface. Fearful of producing too much inflammation, I forbore operating until the 10th of January, 1835, when I made an unsuccessful attempt to introduce the canula. The skin was easily penetrated, but beneath it the instrument came in contact with a very firm membrane, which I in vain attempted to penetrate. The puncture was closed with adhesive strap, and healed very readily.

The difficulty experienced in passing the canula through the puncture made by the stilet, suggested the idea of puncturing the tumour with a needle larger than the canula, and introducing the latter through the puncture thus made, which was carried into effect, January 15th, and ℥ss. of fluid drawn off, similar to the first. One of the ulcers, situated at the base of the tumour, not being quite healed, it was dressed with cerate, and a few adhesive straps were applied to the tumour. During the introduction of the instrument, the child was a little restive, but became quiet in a short time, and, as soon as the dressings were applied, was as lively as usual.

17th. The large needle having been misplaced, I tried a smaller one, but failed to introduce the canula. In puncturing the tumour, I found that the firm membrane before alluded to, and which I supposed to be the dura mater of the chord, was but slightly connected with the integuments, and was carried some distance before the point of the needle before it was penetrated; and, upon reflection, I was convinced that this would cause a want of correspondence between the two punctures. This being the case, the pointed stilet would, from its liability to hitch, prove a serious obstacle to the introduction of the canula. I accordingly filed off the point of the stilet, and the facility with which I afterwards introduced the instrument, proved the correctness of the opinion.

19th. The tumour was of the usual size, and the puncture last made entirely healed. The canula was introduced, and ℥j. of fluid

drawn off. The ulcers having entirely healed, in addition to the straps, lint spread with cerate was laid on to protect the integuments from friction, and a muslin bandage firmly applied over the whole.

21st. The tumour was rather larger than before the last operation; but, after drawing off ℥iss. of fluid, it was reduced to one half its size, and became flaccid. A collar of whalebone, wrapped with a small bandage, was applied around the base of the tumour, to prevent its enlargement in that direction. By increasing or diminishing the wrapping of this collar, it was adapted to the size of the tumour, through the various stages of the treatment.

23d. Two drachms of fluid were drawn off, which completely evacuated the tumour, leaving it collapsed and flaccid. To avoid repetition, I will here add that, at every subsequent operation the tumour was completely evacuated. I have been thus minute in the detail of the treatment, to show that I arrived at the conclusion that the tumour might be completely evacuated at one operation, without risk, not from idle speculation, but from cautious experiment. The history, hereafter, will be continued at longer intervals.

26th. The operation has been repeated twice, and ℥ij. of fluid obtained. The last puncture having suppurated slightly, and the integuments being of a diffused red colour, it was deemed prudent to lay aside the collar, which it was found difficult to prevent from slipping, causing thereby considerable irritation.

31st. Three operations have been performed, and ℥ivss. of fluid drawn off since the last report. At the last operation, but little more than ℥j. was obtained. The tumour is but half as large as when the treatment was commenced, and all the punctures have healed. A flannel roller has been substituted for the cotton one, and from its softness and elasticity, produces much less irritation. It may not, perhaps, be amiss to mention here, that in all the operations the child has suffered very little. While introducing the instrument, she has always been restive; but has become quiet, and has, in many instances, fallen asleep while the fluid was running.

February 4th. The operation has been repeated daily, and the quantity of fluid drawn off has averaged ℥iss. On puncturing the tumour on the 1st inst. it bled considerably, and the fluid was of the consistency of thin syrup, and of a lemon colour; but after standing twenty-four hours, it became transparent, having deposited a copious flocculent precipitate. At each subsequent operation, it became clearer, until it obtained its original character.

In the evening the child was attacked by fever, accompanied by loss of appetite, headache and flushing of the face; and, when visited

next morning, it was ascertained that these symptoms had continued during the night. The tumour manifested no appearance of inflammation. Fifteen leeches were applied behind the ears, and hydrarg. prot. chlor. grs. iij. administered, followed by ol. ricini ʒj. On the 6th, all unpleasant symptoms having disappeared, the operations were resumed.

11th. Nine ounces of fluid have been drawn off since the 6th—it has been once or twice of a light straw colour. The tumour manifesting a disposition to enlarge at the base, the collar was reapplied, with a graduated compress.

16th. Five operations have been performed, and ℥v. of fluid obtained. At the second operation, only ʒiij. were drawn off; but owing to the slipping of the apparatus, the quantity has increased to ℥iss. The increase of the tumour, whenever the apparatus has slipped, has been constantly observed; but whether it may be considered as cause or effect, it is rather difficult to decide. I am inclined to think, however, that the increase of the tumour is the effect of the slipping of the apparatus, as the sac is by that accident freed from pressure, and consequently secretes more freely. On the contrary, it has also been observed, that when uniform and firm pressure was kept up, there has been a very manifest diminution in the size of the tumour, and the quantity of fluid. In order to produce the requisite degree of pressure, a conical wooden truss, made to fit the collar, has been substituted for the muslin compress, care being also taken to protect the tumour from the immediate contact of the wood, by the interposition of fine muslin. The collar was also secured by adhesive straps, in such a manner as to prevent its slipping in future.

21st. Six ounces have been drawn off since the last report. On the 19th, the quantity obtained was only ʒvj.; the child complained when the tumour was roughly handled, and the fluid was tinged with blood.

28th. The operation has been repeated seven times, and ℥vj. of fluid drawn off, since the 21st. The coats of the sac have coalesced, and are much thickened, which renders it necessary to use more force in passing the instrument, and the tumour is less than one half its original size.

March 5th. Four and a half ounces of fluid have been evacuated at four operations; that obtained at the last operation presented, in a slight degree, a milky appearance.

10th. The fluid, which amounted to ℥iij., drawn off at four operations, again presented a syrupy appearance, and deposited a red, flocculent precipitate.

11th. The instrument was introduced in the presence of Dr. Gibson, but only a few drops of fluid escaped.

17th. The operation has been repeated daily, and the first three operations vj., v., and ʒiij. were respectively obtained; but the notes of the last three operations have been mislaid. The fluid presented again a milky appearance.

23d. The tumour has become universally of a red colour. The amount of fluid since the 17th has been ℥iiss. at four operations.

27th. A small ulcer was observed on the top of the tumour, and two or three of the punctures have suppurated slightly. The quantity of fluid drawn since the last report is ℥iiss. Dressed with lint spread with cerate, adhesive strap, and bandage.

30th. The ulcer having nearly healed, and the tumour being considerably distended, and red, it was punctured, and ℥j. of clear fluid evacuated. Dressed it as before.

April 1st. Drew off ℥j. of fluid, reapplied the collar, &c.

7th. The ulcer and punctures have entirely healed. ℥ij. of fluid have been drawn off since the 1st.

10th. Drew off ʒiij. of fluid.

The child was visited by its mother at this time, who gave it a sour orange, which immediately produced a diarrhœa. The operations were consequently suspended, and under the use of anodynes, with low diet, the disease gradually improved until the 14th, when it was apparently arrested. My connexion with the Institution having terminated, and being compelled to be absent from the city for some time, I left the case in charge of my friend, Dr. C. R. Boyer, expecting to resume the treatment on my return. The diarrhœa returned, however, within a few days, and, baffling all attempts to arrest its progress, terminated fatally. I shall subjoin the notes on the termination of the case, and the autopsy, which the doctor has had the kindness to furnish me.

"On the 17th, the diarrhœa continued; bowels being moved five or six times a day, and stools consisting of a yellow serum, mixed with undigested food, the following powders were administered:— ℞. Hydrarg. prot. chlor. grs. ij., opii et ipecac. pulv. comp. grs. iv., to be divided into eight powders, one of which was administered every hour. This not succeeding, after a trial of two days, the chalk mixture, with the adddition of rhatan. extr. in the proportion of a drachm of the latter to four ounces of the former was administered, and seconded by anodyne injections, the warm-bath, frictions over the abdomen, with a mixture of spts. camphor. ʒiiss. and ol. terebinth. ʒss., and the application of a broad flannel roller. The diet was re-

stricted to arrow root, and boiled milk. On the fifth day of my attendance, the child was observed to gag, and was relieved by bringing up a lumbucus three inches in length. The treatment was continued.

Two days afterwards, Dr. Hodge was requested to see the patient. The previous treatment had not availed to check the diarrhœa, and he prescribed the syrup rhei. arom. and an emulsion of gtt. viij. of the spts. terebinth. to the ounce of fluid, each to be given in tea-spoonful doses. Boiled flour grated, and boiled again in milk, was directed for aliment. This treatment also failed to produce relief.

For two or three days prior to death the breathing was frequent and difficult, accompanied with the mucous rattle, for which six leeches were applied to the chest on the 23d. The child died rather unexpectedly in the night. The intellectual functions have been undisturbed, the abdomen hot and dry, but the existence of pain could not be verified, as the child cried incessantly when approached; pulse very frequent. The tumour was punctured three times while under my care, and a limpid fluid discharged to the amount respectively of v., iij., and ℥iv.

Autopsy.—Present Drs. R. G. Morton, C. W. Pennock, and R. R. Porter. *Thorax.* Left lung adherent to costal pleura, with portions of false membrane on its surface; superior lobe emphysematous (interlobular) and floated in water; lower lobe red and indurated. Right lung pneumonic in the inferior lobe—induration lobular, interspersed with healthy lung. Bronchial mucous membrane lubricated with pus.

Abdomen.—Intestines distended with flatus; some of the folds of a livid hue; mucous membrane of a deep red colour, and very much injected in portions varying from six to eighteen inches, but without ulceration. Stomach and liver healthy. Right kidney large, sanguineous, and showed very strikingly the difference in structure of its two portions.

The integuments were collapsed near the tumour, which was shrivelled and apparently thickened. When the tumour was laid open, the skin, cellular structure, and sac were found condensed and matted together, so that the limits of each could not be defined. The cavity was about the size of a walnut, and contained a drachm or two of limpid fluid; the internal surface was of a pearly white colour, and its serous membrane in a healthy condition. One or two of the last spinous processes being deficient, left an oblique opening into the spinal canal, one inch long and half an inch broad."

Observations.—This was undoubtedly a case of local spina-bifida, i. e. one in which neither hydrocephalus, extensive disease of the

spinal cord, nor any other malformation existed. It is to such cases that the curative plan of treatment has been very justly restricted.*

The treatment pursued, was that first recommended by Ruysch; and practised unsuccessfully by himself and many of the older surgeons, but which has more recently been attended with success in the hands of Sir A. Cooper† and several other British surgeons.‡ I am not aware that any other person has ever resorted to the same expedient that was adopted in this case, to obviate the closing of the puncture of the needle, with which instrument all agree that the operation should be performed. Bampfield mentions, that small trochars have been recommended to open the tumour with; but the needle and canula are certainly safe, as the puncture made by them will heal more readily than the wound of the smallest trochar that could be made.

The established practice was departed from, however, in one particular, viz. in repeatedly evacuating the tumour at one operation. It was recommended by Mr. Abernethy§ to evacuate the tumour very gradually, just as the pus is drawn off in lumbar abscess, as death frequently followed the sudden evacuation of the fluid. From a careful examination of the symptoms preceding death in fatal cases, I was convinced that sudden death took place in those only which were complicated with hydrocephalus or extensive disease of the spinal chord; and that in those cases of a local character, death was the result of an inflammation of the chord and membranes. With this impression, I could not see any danger in the evacuation of the tumour at one operation, provided the necessary means were resorted to to prevent inflammation.

I think there can be no doubt as to the favourable termination of the case, but for the unfortunate supervention of diarrhœa and pneumonia. The tumour had been punctured seventy times without any serious accident, was reduced to less than one-fourth its original size, and would probably in a short time have been completely obliterated, the thickened sac would have ceased to secrete, and by the use of a proper truss or compress, would have become, in a short time, adherent to the opening into the spinal cavity, and prevented the fluid of the chord from reproducing the tumour.‖ The autopsy ren-

*Medico-Chirurgical Transactions, vol. ii. p. 226–229; Bampfield on Curvatures and Diseases of the Spine, p. 324–325.

†See London Medical and Physical Journal, for July, 1822.

‡Bampfield, *Op. Cit.* p. 320. §Bampfield, *Op. Cit.*, p. 316.

‖I am happy to state, that Dr. Gibson and all who had an opportunity of watching the progress of the case, concurred with me in the opinion, that it would eventually terminate favourably.

ders it very evident that the tumour had no share in the production of death—that was the result of the inflammation of the alimentary canal and lungs. The inflammation of the bronchial mucous membrane especially must have been very intense to have produced the effusion of pus which was observed.

The quantity of fluid drawn off during the progress of the case was more than four pints, its specific gravity was 1·15, taste slightly saline, odour at first slight, but, after standing a few days, fœtid, and resembling that of the liquor of oysters. It was subjected to a boiling heat without producing any change in its appearance. Nitric and sulphuric acids, and corrosive sublimate were repeatedly added to it without causing any precipitate; but tinct. gall. and nit. argent, gave very copious precipitates, the latter of which became black on exposure. The fluid of spina-bifida has been compared to the serum of the blood, and dropsical effusions; but the above experiments, imperfect as they were, prove, that in this case at least, the quantity of albumen was much less than ordinarily exists in those fluids. I regret that I did not have it in my power to give a more perfect analysis.

ART. VIII. *On the Diuretic Powers of the Aralia Hispida; with some remarks on the action of Diuretics in Dropsy.* By OLIVER PECK, M. D., of Sheffield, Massachusetts.

The *Aralia hispida* grows in considerable abundance in this part of the country, and has been used for a few years by some of our physicians as a diuretic. It is here called *dwarf elder*, from its general resemblance to the *Sambucus Canadensis*, though it is a much smaller plant, usually about a foot and a half high, growing in rich, neglected fields, of a damp soil. The stem is shrubby at the base, and thickly covered with stiff bristles. *Leaflets about an inch long, sessile, acutely serrate; peduncles terminal and axillary, bearing from two to four umbels; involucrum, of many short subulate bracts; pedicels filiform, smooth; flowers, greenish-white; petals reflexed.* (Torrey.) It is also called wild elder. The taste of the root has a strong resemblance to that of the sweet cicely. *(Myrrhis Clatoni*, Mich.)

The decoction of the root is the part used here, drank *ad libitum*, and when used in this form, it is certainly a diuretic of very valuable powers, capable of fulfilling all the indications that our domestic diuretics are capable of, and has, moreover, a pleasanter taste, and sits

better on the stomach than most articles of the kind. Its diuretic powers are superior to those of the winter green, parsley, knol grass, or the root of the currant, and much more agreeable to the taste. I first became acquainted with this plant in 1832-3, while treating a case of hydrothorax and anasarca, connected with a disease of the heart. The patient was a woman, about 60 years of age, of a very robust constitution, who had been, in her youth, accustomed to the labours of the field; on an occasion of that kind she over-exerted herself, and always afterwards had, at times, a palpitation of the heart. The immediate cause of the dropsy seemed to be an intermittent, produced by a residence near a malarious locality. Digitalis was tried, and for a time answered well, without producing any considerable narcosis; but at length its diuretic effect was lost, though its influence on the nervous and circulatory system was severe. There was not exactly a confirmation of the opinion of Paris and others, that the diuretic and narcotic effect of the article in question are inseparably connected, and hence advise not to diminish the narcotic effect by the addition of stimulants. Squills, in various forms, was next tried, but it soon caused so much disturbance of the stomach, that it was abandoned. The next resort was to the milk weed, (*Asclepias syriaca,*) from which she experienced considerable relief, but after awhile it produced an insupportable loathing, and its use was consequently discontinued. With my concurrence, she now used the species of *Aralia* above described, and found it fully equal in diuretic power to the milk weed, and much pleasanter to the taste, and sitting altogether better on the stomach. The saline diuretics produced so much atony of the stomach and bowels, that they were not much used in the treatment of her case; at last the urinary organs seemed to be almost insensible to the action of any diuretic, and I expected the woman would soon die. This was about six months after the commencement of her illness. I accordingly advised her to discontinue all diuretics, and to take no medicine excepting opium to quiet the general irritation, and to trust to scarification of the feet for the discharge of the water. As I was about preparing to make the incisions, the skin of both her legs ulcerated, and water was discharged enough to relieve the oppression of the vital organs in a considerable degree. The appetite improved by the discontinuance of medicines internally, and she remained in a state of more comfort for about a year and a half. From the commencement of her illness, the greatest source of annoyance to her was, at times, an extreme soreness of her legs from her knees to her ankles, by the abrasion of the cuticle, in consequence of the tumefaction. This, however, was in a measure relieved by the application of linen bandages to her legs, as tight as could be borne, and by

sprinkling the surface over with finely levigated calamine powder —starch. In the fall of 1833, she was seized with a diarrhœa, which she neglected for some days, under an idea that it would carry off the remainder of the dropsical effusion. The diarrhœa was soon checked by the use of the compound powder of chalk and kino, but she was reduced by the disease of the bowels past hope, and died in a few days.

In regard to the *Aralia hispida*, which in this, as well as in other cases in which I have used it, showed so promptly its diuretic effect on the kidneys, it manifestly possesses properties which render it worthy of a more extensive trial. I intend, shortly, to send some of the plant to my friend Charles A. Lee, M. D., of New York, who suggests that an extract or tincture may be prepared from it which may be of service to the profession, and I hope he will favour the readers of your Journal with the results of his investigations.

Sheffield, Massachusetts, July 28, 1836.

ART. IX. *Rupture of the Scapula, from its adhesions to the subjacent muscles and inferior portion of insertion of rhomboideus major, unconnected with fracture or injury of any other bone.* By WM. W. KEMP, M. D., of Frederick City, Maryland.

On the 29th October, 1835, I was requested to see a gentleman who had received a fall from his horse, and in the language of the messenger, "had almost lost the use of his arm." The patient, Mr. Geo. D—. lived about 15 miles from this city, and on his way to this place, (Frederick,) to attend our county court, met with the accident. In descending the mountain, about 4 miles from Frederick, over a rough and stony road, his horse fell and threw him to some distance, on his right elbow. On arising, he experienced considerable pain in his right shoulder, but supposing the injury to be merely a contusion produced by the forcible impulsion of the humerus upwards, he continued his journey to town. His fears became excited, from his inability to exert any force with his right arm in restraining the violent movements of his horse, now rendered refractory by his late fall. He discovered, by having firm pressure made upon his shoulder, that he could exert a greater degree of force, than he could possibly command with his shoulder unsupported. All exertion of this kind, with his shoulder unguarded, produced acute pain in the region of the scapula, accompanied by a painful degree of tension of the several muscles connected with that bone.

On presenting himself to me, the scapula appeared drawn but slightly forward, owing evidently to the rupture of the adhesion of but one muscle attached to the posterior margin of the scapula. The lower angle of the injured bone appeared slightly more prominent than the sound one, and the mobility of the right, greatly exceeded that of the left scapula. There was a slight tumefaction discoverable about the injury. He could grasp objects with accuracy, and retain them with some degree of firmness, as long as they rested on a table, but was unable to lift them from the surface on which they were placed. He could not elevate his arm so as to apply his hand to his head. The two last phenomena may be readily accounted for, by the fact, that the principal muscles which regulate the actions of the hand and fingers, arise, some of them, partly from the humerus and bones of the forearm, others from the forearm entirely; but when he called into action the muscles connected with the scapula, his power was feeble. On the closest inspection, no injury could be discovered in the shoulder joint, or the sternal or humeral articulation of the clavicle. The coronoid and coracoid processes of the scapula were uninjured. From the aspect of the case, I judged that the cellular adhesion between the subscapularis muscle and serratus magnus had been torn up, and the inferior attachment of the rhomboideus major ruptured. I am utterly unable to account for the detachment of the rhomboid muscle by any force directed to the scapula applied as this was.

The indications in the management of the case were, to reduce the inferior angle of the scapula to its proper position and retain it there, and fix the entire bone in its situation in relation to the serratus magnus, at the same time to prevent all motion of the arm. I succeeded in the first purpose, by applying the large end of a pad in the axilla, to throw the shoulder outwards, necessarily giving a backward direction to the inferior angle of the scapula. This much accomplished, I applied rollers Nos. 1 and 2, recommended by Desault, for fractured clavicle. These retained the scapula in contact with the muscle beneath it, and effectually prevented motion of the arm. The fore arm was suspended in a sling, and the dressings completed. I consider the case interesting, more from the infrequency of its occurrence, than from any practical information to be derived from it, as the indications were sufficiently plain, and the means of effecting them easy and obvious. An occasional cooling lotion to the part to allay inflammation, and administration of refrigerant laxations, constituted the treatment.

Frederick City, Md., 30th May, 1835.

ART. X. *Case of Cancer in the Throat, operation and recovery. Death from peritoneal inflammation. Remarkable transposition of all the organs.* By J. MASON WARREN, M. D.

June, 1835, Mrs. A—, aged 65, married. Has always enjoyed good health, though occasionally troubled with derangement of the digestive organs on the use of particular kinds of food; this more especially during the last two or three years. About six months since, perceived a slight swelling on one of the tonsils, (the left) which gave her some trouble in swallowing: consulted her physician, (Dr. Shattuck) who advised some antiphlogistic remedies, and on the swelling not being resolved, made a puncture into it with the lancet; a small quantity of blood only was discharged from the opening. The tumour gradually increased in size, became more firm in consistence, and finally extended to the soft palate, and attached itself to the lower jaw, so as materially to impede its motions. All means of resolving the tumour having been tried in vain, and it having assumed a decidedly cancerous character, Dr. J. C. Warren was consulted in regard to the propriety of removing it by an operation.

The following were the appearances presented at this period on examination. Patient not much reduced in strength by disease, not much emaciation, countenance pale, digestion pretty good, though as stated above, liable to be deranged by exposure, or by imprudence in food, so as to bring on vomiting and diarrhœa. The following was the state of the diseased parts. On the left side of the throat, and occupying all the back part of fauces, was a firm indurated tumour, extending itself backwards and upwards into the posterior nares, and forwards to the lower jaw, to which it was firmly attached; the tonsils of that side and soft palate being both included in the disease. The examination of the diseased parts, left no doubt of the disease being cancerous, and that extirpation afforded the only hope of saving life. The case however was stated to the patient, who was a woman of much firmness, and she had no hesitation in complying with any thing which her medical attendants thought advisable for her recovery.

The operation was performed by Dr. Warren in June.

The mouth being kept open by the French speculum, the diseased parts were seized with a strong pair of double hooks, and as much of the tumour as possible excised at once with the probe-pointed bistouri; the remainder of the disease was then dissected out with the common bistouri. The latter part of the operation was rendered exceedingly difficult from the struggles of the patient, on account of the great rush

of blood which stopped respiration, and also completely obscured the diseased parts. For greater precaution, and to arrest the hæmorrhage, the operation was terminated by the application of the actual cautery. The tumour was of a firm, cartilaginous nature, almost of bony hardness, somewhat ulcerated in the centre, and fully confirmed on examination the opinion of the medical attendants, that nothing but extirpation would have given any chance to the patient for her life.

The patient bore the operation well, which was short, two or three minutes only being consumed in the cutting part; she was put to bed, and ice water the only thing allowed to be taken.

She passed a pretty good night; pulse 100; the following morning complained of no pain. Every thing went on well the first week: at the end of that time a slight hæmorrhage took place from the separation of the sloughs where the cautery had been applied: this was easily arrested by gargles of ice water, and the external application of ice to the neck; at the end of a fortnight, on examination of the throat, after all the sloughs had separated, a healthy, granulating surface was presented by all the front part of the wound; behind, however, was a small fungous excrescence, quite in the back part of the fauces; to this the caustic potass was applied, so as entirely to destroy it by a single application.

On the separation of the slough, a slight hæmorrhage again took place, and was arrested in like manner as the first, by the external application of ice, and a gargle of kreosote and water. This gargle also gave the patient great comfort, by obviating the exceedingly nauseous and almost insupportable taste arising from the separation of the sloughs.

From this time she gradually recovered her strength, though from her age, and the severity of the operation, it was some months before she was able to get about the house. She was advised to live sparingly, and during the following winter to confine herself as much as possible to her room.

In the month of January, 1836, after having exposed herself to the cold, by leaving her room and assisting in washing, which she had not done before, she was seized with all the symptoms of violent peritoneal inflammation, and died after an illness of four days.

Dr. Shattuck, sen., being engaged, as well as Dr. J. C. Warren, the examination of the body was made by Dr. Shattuck, jr., and myself, the day after her death.

The following were the appearances offered at the post-mortem examination of the body. On opening the abdomen, the ordinary appearances presented by a severe peritoneal inflammation were

found, the intestines highly injected and firmly adherent from coagulated lymph. The most remarkable thing, however, which offered itself, was a tumour in the left iliac region, at first supposed to be an invagination of the intestine, but which, on further examination, proved to be the *cæcum*, and, in tracing up the intestine to the stomach, this organ was found in the right hypochondriac region, the left being occupied by the liver. All the other organs, both in the chest and abdomen, were in like manner transposed, those which are usually placed on the left side being on the right, and, *vice versa*, the right on the left.

The heart lay to the right of the spinal column, occupying a place with the right lung, which consisted of but two lobes, there being three on the left lung; the cavities were all, in like manner, transposed. From the right auricle proceeded the four pulmonary veins; the right ventricle had the form and thickness usually possessed by the left, and contained the mitral valves. The left auricle received the vena cava, the left ventricle contained the tricuspid valves.

From the right ventricle, the aorta had its origin; this, after running up a little to the left, curved over to the right, and was placed on the right side of the spinal column, having the vena cava on its left.

From the arch of the aorta only two arteries, instead of three, were given off, forming another peculiarity in this remarkable case.

The first artery to the left given off, was the largest in size, an inch from its origin, divided into what would correspond to the innominata and into the right carotid; the innominata gave off the left carotid and subclavian; the other arteries given off from the arch, was the right subclavian.

All the organs in the abdomen, as stated before, were in a similar manner transposed, the liver was on the left side, the stomach and spleen on the right side, &c.

The subject of this remarkable anatomical structure, was the mother of fifteen children; nothing was remarked during life to lead one to suppose that such a disposition of organs existed.

It has been supposed by some anatomists, that the existence of the innominata on the right side has some influence in the preference given to the right hand over the left; this lady was not, however, "*left handed*," as would naturally be the case, if such assertions were true. The only similar cases which I remember to have seen published, are in the eighth volume of the Dublin Medical Journal, taken from Dr. Houston's Catalogue. Larrey, in his Surgical Memoirs, also mentions having seen a like case.

Boston, April, 1836.

REVIEWS.

ART. XI. *First Lines of Physiology, designed for the use of Students of Medicine.* By DANIEL OLIVER, M. D., Professor of the Theory and Practice of Physic, &c., in Dartmouth College. Boston, 1835. 8vo, pp. 520.

These First Lines can lay no claim whatever to novelty or originality; we are, nevertheless, persuaded that their publication will entitle Dr. Oliver to the thanks, not merely of the medical student, but of all who may be desirous of acquiring a knowledge of the interesting and important science of physiology. Among the numerous manuals that have of late years appeared, we know indeed of none better adapted, in all respects, to afford a general view of the leading facts and principles connected with the physiology of the human body, and to prepare the mind for the study of those more extensive treatises in which the science is taught in all its details.

The author has exhibited great industry in collating the best authorities, and no little judgment in selecting and carefully digesting and arranging his materials. He has thus been enabled to present a large mass of facts in a form which, though extremely concise, is, at the same time, sufficiently perspicuous.

The work of Dr. Oliver professes to give nothing more than a mere outline of human physiology, yet it will be found to comprise a very accurate summary of the present state of the science, together with a notice of the different views of leading physiologists in regard to the several points which are still in dispute.

It is not our intention to enter upon a regular review of the facts and doctrines set forth in the work before us, which would lead to an examination of the actual state of physiology, but merely to present to our readers a general idea of its plan, and the manner in which the author has accomplished the object which he had in view in its publication.

After defining physiology, and noticing the two leading classes of bodies, the inorganic and organic, and their respective material and dynamic properties, Dr. O. next considers the relations of organic bodies to heat, light, and electricity. Animals and vegetables are then compared, and a general view presented of the scientific division of the animal kingdom. These subjects occupy the first five chapters. With the sixth chapter commences the general view of the structure of the human body, comprising the anatomical, chemical, and physiological analysis of its organization.

This portion of the First Lines presents an admirable digest of

those particulars which may be considered, in some measure, introductory to the strictly physiological portion of the work.

When treating of the general properties of the human organization, Dr. Oliver sets down that of active expansibility as being possessed by certain of the tissues and organs. Now, although we are not ourselves inclined to deny the possibility or even probability of the existence of such a property, especially in the capillaries, we conceive that it is altogether incorrect in the author to include it among those properties of the organization which are unequivocally established. Many eminent physiologists will not admit even the possibility of its existence, and many difficulties, it must certainly be confessed, stand in the way of its admission. In regard to a majority of the phenomena attributed to the power of active expansibility by Dr. O., they can be satisfactorily explained, without the necessity of supposing them to depend upon the exercise of a property, to say the least of it, so purely hypothetical.

We extract all that the author says upon this subject.

"*Expansibility.*—Another of the motive forces, is *expansibility*, a property, by the exercise of which a part becomes the seat of a turgescence or active dilatation. This power differs from elasticity, which is purely a physical property, in not requiring the application of an expanding force. It is directly opposed in its nature and effects to the faculty of contractility.

"The property of expansibility is exemplified in the phenomena of vital turgescence in the *erectile tissues*, as the male and female organs of generation, both external and internal, which become turgid, and gorged with blood, under the influence of venereal desire; and in the nipple, which is similarly affected in the act of suckling. The same property is manifested in the skin, and the subcutaneous cellular tissue. Thus, the face is said to swell with pleasure, the neck to become tumid with anger; the ends of the fingers experience a degree of erection in the act of touching, and the papillæ of the tongue in tasting. In a state of inaction, these papillæ are small, soft, pale, and indistinct. In a state of erection on the contrary, they are enlarged, erect, red, and turgid with blood. In fact, any of the soft solids, which are furnished with blood-vessels, may become the seat of this phenomenon. Any of them may become the focus of a fluxion of blood, if subjected to irritation. Thus, the internal membranes, as the serous, mucous, and synovial, when irritated, become turgid with blood, which accumulates in their vascular tissue. This is particularly exemplified in the gastric mucous membrane, when excited by the presence of aliment; and in the serous and synovial membranes, when exposed to the air, or subjected to any kind of irritation. The glands exhibit similar phenomena under the same circumstances; and even the muscles and nerves, and other parts provided with vessels, become turgescent with blood, when laid bare, and subjected to irritation.

"The parts which exhibit this phenomenon in the most conspicuous degree, as the organs of generation and the nipples, are composed of a tissue of blood-vessels, interlaced with numerous ramifications of nerves.

"The erectile tissues are sometimes developed accidentally, or by disease. Aneurism by anastamosis is of this description. Hæmorrhoidal tumours, also, sometimes present all the characters of the accidental erectile tissues.

"The dilatation of the heart, which succeeds the systole of the organ, and the expansion of the iris, in the contraction of the pupil of the eye, are referred by some physiologists to this species of vital motion. During the dilatation of the heart, the organ swells up, and becomes harder, in expanding to receive or suck up, as it were, the next wave of blood from the veins.

"The expansion of the iris which produces the contraction of the pupil, is regarded as the active motion of the iris, because it is produced by the stimulus of light on the eye; whereas the contraction of the iris by which the pupil is enlarged, is occasioned by the absence or diminished energy of the proper stimulus

of the eye, and is always greatest in cases of paralysis or much debility of the organ.

"The structure of the iris, however, is a subject of controversy among anatomists. According to Magendie, and others, it is unquestionably muscular, and is composed of two sets of fibres, one of which is exterior and radiated, and by its action dilates the pupil; while the other, which is interior or next the pupil, is circular, forming a sphincter, which, by its contraction, diminishes this aperture. If this be admitted, the contraction of the pupil is the effect of muscular action, and cannot be referred to the expansibility of the iris.

"It has been conjectured that the act of absorption may be promoted by the exercise of this power in the absorbent vessels, their inhaling radicles thus opening to receive and suck in the fluids which they are destined to absorb. The extent and limits of this force, however, are not accurately defined."

With chapter xii. commences the consideration of the functions. The arrangement of the functions adopted by Dr. Oliver, is that of Chaussier, into *vital*, *nutritive*, *sensorial*, and *genital*. Every classification which can be adopted, must, it is evident, be more or less arbitrary and defective. We admit with Dr. O. that the preceding is, upon the whole, less objectionable than any other—it is at least equally useful for all the purposes of arrangement.

Under the head of *vital* functions, the doctor includes those of which the continued exercise is absolutely indispensable to the maintenance of life. These functions are *innervation*, *circulation*, and *respiration*.

The exercise of the second class of functions, the *nutritive*, is not so immediately necessary to life as that of the first. This class includes *digestion*, *absorption*, *nutrition*, and *secretion*.

The third class of functions, the *sensorial*, are still less necessary to life than either of the former, and their exercise may be suspended for a considerable time without danger. The sensorial functions are those of relation; namely, the *sensations*, *intellectual operations*, and *voluntary motions*.

The fourth class of functions, the *genital*, have no concern in the preservation of the individual, but relate solely to the perpetuation of the species.

The term innervation is made use of by our author to express the influence of the nervous system upon organic life in general. This is a subject, however, upon which we have still very little positive knowledge, very different and dissimilar opinions being entertained in relation to it by eminent physiologists.

Thirteen pages of the First Lines are occupied with a minute anatomical description of the nervous system. This, in our opinion, is altogether unnecessary—mere anatomical details are misplaced in a work devoted strictly to physiology, particularly in a compendium of the science composed for the use of medical students. An accurate knowledge of the anatomical structure of the human body and of its several tissues and organs is unquestionably an essential prerequisite to the investigation of the functions and phenomena of life, but this knowledge is to be obtained from the proper sources, previously to entering upon the study of physiology. The anatomical details generally admitted into physiological treatises are seldom calculated to

convey to the reader a sufficiently distinct and accurate idea of the form and structure of the several parts of the organism.

The general view presented by our author of the functions of the nervous system is clear, and on all those points which may be considered as fully settled, it deserves great credit for its accuracy. The mass of facts which have been adduced of late years, in relation to this important subject, have been carefully collected and digested, and arranged with much skill.

In considering the influence of the brain over the nutrition of the body, Dr. Oliver instances the circumstance of "the paralysis of a limb often tending to atrophy or withering." This, however, only indicates a very indirect influence. Even when no interruption of the nervous influence has taken place in a limb, if by any means it be kept in a state of complete inaction, the same or even a greater degree of atrophy will be induced.

The following is Dr. Oliver's summing up of the several functions of the brain:—

"On the whole, the brain is the organ of intelligence; it directs the means by which we react upon the external world; it exercises an important influence over the functions of internal life; and, as the great centre of the nervous system, is probably the principal organ of sympathy.

"These functions of the brain, especially the two latter, render this organ indispensable to life in the higher classes of animals; and, accordingly, we find that injuries of this organ from accident or disease, are generally, though not invariably, fatal.

"Though it be true, however, that the functions of internal life are more or less influenced by cerebral innervation, yet it must not be inferred that they are dependent on this organ; since it is well known that full grown fœtuses have been born, destitute of every trace of brain, and even of a spinal marrow. From this, it would seem, that during fœtal life, the innervation of the ganglionic system is sufficient to maintain the nutritive and vital functions, in their imperfect and rudimentary state; but that, after birth, when the individual commences a new and more elevated existence, when all the phenomena of animal or external life start at once into existence, and the brain, their common centre, is roused to the exertion of all its sleeping energies; when two of the most important of the organic functions which are immediately dependent on encephalic innervation, viz. digestion and respiration, first begin their exercise; the empire of the brain is extended over all the functions of life, connecting them together in a bond of reciprocal dependence and sympathy; and cerebral innervation then becomes indispensable to their regular exercise, and consequently to animal life."

In the sections devoted to the sensorial functions of the brain—the sensorial functions of the spinal cord—the influence of the spinal marrow over the organic functions, and to the functions of the nerves generally, there are many points which would admit of discussion were it our object to enter upon a regular review of the doctrines advanced in the work before us. Upon disputed points, however, the author had, unquestionably, a right to adopt such conclusions as appeared to him to be established by known facts. This right he has formally claimed in his preface.

"There are many questions," he remarks, "on which physiologists are by no means agreed, and what one holds to be sound doctrine may be regarded as heretical by another; and, of course, it is impossible for any system of opinions to obtain universal approbation. On such questions, the author has exercised the common privilege of being guided by his own judgment, after carefully weighing the authorities and the evidence on opposite sides of the disputed points."

Dr. Oliver's account of the intellectual and moral faculties of the brain, though highly interesting, and like most of the subjects of which he treats, presented with great clearness, is nevertheless meagre and unsatisfactory. This part of physiology has occupied, of late years, so closely the attention of the most distinguished cultivators of the science, and has given rise to so much controversy, that we had a right to expect even in a compendium of physiology like the present, a more extended view of the present state of opinions in relation to it. The subject of phrenology does not receive the slightest notice; this is the more remarkable, as Dr. O. considered it necessary to introduce a chapter on animal magnetism, in consequence of the attention which the latter has recently attracted, believing that "a doctrine embraced by such men as Rostan, Georget, Guersent, Itard, Hufeland, and many other distinguished names, ought not to be rejected with contempt, and without examination, as a tissue of the grossest charlatanism and fraud."

Whatever may be thought of the force of the evidence which has been adduced in support of the general doctrines of phrenology, this much at least must be admitted, that the latter are of too interesting a character to permit of their being passed over in perfect silence. We do not know how any system of physiology can be considered complete that does not present a very full exposition of them.

The circulation of the blood constitutes the subject of chapter xiv. The author here exhibits a very able digest of every important fact and doctrine connected with this important function.

Dr. O., as we have already seen, assumes for the heart the power of active dilatation; he has not, however, adduced in the present chapter any striking arguments to establish his position, the correctness of which will be strenuously controverted by the majority of physiologists. Another opinion set forth in this chapter, will be esteemed equally erroneous by many—we allude to the independent circulation of the capillary vessels, and their power of attracting the blood into the parenchyma of the organs for the purposes of nutrition, &c.; an opinion, nevertheless, in support of which many almost conclusive arguments may be adduced, and the adoption of which seems to be indispensable, in order to explain all the circumstances connected with the physiological as well as pathological states of the circulation.

"It appears, on the whole," says our author, "that the blood moves in the capillaries under a three-fold impulse, viz., the action of the heart, that of the arteries, and that of the capillaries themselves. This last is probably the chief cause.

"But besides this impulse, to which the blood is subjected in the capillary vessels, and which impels it forward in the course of the circulation, and causes it to pass from the arteries into the veins, it is subject to another, which attracts it into the parenchyma of the organs, to be employed in nutrition, secretion, &c. Between these two impulses the blood sometimes appears to hesitate, as if it were at a loss which to obey. The action of the heart moves it in the first direction; the peculiar action of the *nutrient* and *secretory* capillaries themselves draws it in the other. Any irritation applied to these vessels, increases the flow of blood towards them; a principle which is illustrated in inflammation. Hence, the attractive influence of the capillary vessels regulates the quantity of blood which traverses the other parts of the circle of circulation. They may either attract more or less blood to themselves, or refuse to receive it, and thus materially influence the course of the blood in the great vessels, change the pulse, and deter-

mine the quantity of blood which passes into the veins, and, consequently, of that which moves in the heart and arteries. The arteries and veins become larger in an organ which is the seat of a chronic irritation. From these, and many other similar facts, it appears not improbable that the principal office of the heart is to propel the blood into the great arteries, which is thence drawn out, as it were, by the attractive power of the capillary vessels determined by the wants of those parts of the system to which they belong.

"When a part of the capillary system attracts to it more blood than usual, the fluxion extends to the neighbouring vessels, and from them gradually to the larger arterial trunks. Hence the increased action of the arteries which go to an inflamed part.

"Each organ attracts from the great vessels different quantities of blood, according to its degree of vitality, and the activity of its functions. Even in the same part, the capillary circulation varies in its activity, according to the degree of excitement which happens to prevail. Every morbid condition of an organ is accompanied with a change in its capillary circulation. Further, there are some organs, whose functions are intermittent, as the uterus; and these must attract more blood into their vessels when in a state of activity, than when at rest. All these considerations go to establish the importance of the functions of the capillary vessels, and appear to justify the opinion of Broussais, who considers the great vessels as a reservoir to furnish the capillary system with blood; from which these last named vessels draw out only the quantities which they require."

The several forces which cause the blood to move through the veins in the direction of the heart are, according to Dr. Oliver, the *vis a tergo* derived from the action of the heart, the arteries, and the capillary vessels; the contractile powers of the veins themselves; the *aspiratory action* of the heart; the expansion of the lungs in inspiration, and the contraction of the muscles in contact with the veins.

The fact of the veins exerting a motive action upon the blood, can only be established by showing that these vessels possess the property of active contraction; now, although the experiments of Hastings and others would seem to render this at least probable, it cannot be considered as proved; consequently, Dr. O. is not warranted in assuming "the contractile power of the veins" as one of the causes by which the motion of the venous blood is produced. Neither can we admit as any better established, "the active dilatation of the heart, by which it is conceived the blood is sucked up in the veins, like water in a pump." The several circumstances adduced by the author in support of the aspiratory action of the heart, supposing these to have been accurately observed, cannot be considered as conclusive in the face of all the objections which present themselves.

Even admitting the suction power of the heart to exist, Dr. Arnott denies that it would promote the passage of the blood through the veins, because the latter being pliant tubes, would collapse from atmospheric pressure, instead of suffering the blood to be pumped into them, by the action of the heart. If, he remarks, the point of a syringe be inserted into a piece of intestine or eel skin, or a vein filled with water, on attempting to pump up the water by drawing the piston of the syringe, the water nearest the mouth of the syringe will be drawn in, and then the sides of the tube will collapse, acting as a valve to the mouth of the instrument, and putting a stop to the experiment. Dr. Oliver, however, considers that this experiment of Arnott is not a fair representation of the actual condition of the veins in the human body.

"For while the circulation is going on, the capillary vessels are constantly forcing blood *into* the veins, as fast as it is flowing *out* of them by other causes. The experiment, in order to be satisfactory, ought to be performed in a different manner. Into a piece of intestine, or eel-skin, filled with water, should be inserted not only one syringe to draw the water *out*, but by another, at the opposite extremity, to force it *in*, in the same proportion, so as to keep the vessel constantly full. Then the atmospheric pressure could not make the tube collapse, but would be exerted upon the column of fluid contained in it, and force it into the upper syringe."

It may, with great propriety, be replied to Dr. Oliver, that, admitting *his* experiment to be a fair representation of what actually takes place in the venous circulation, the *necessity* for the active expansion of the heart is entirely done away with. The syringe at the lower end of the eel-skin tube, which continually forces in the fluid, in proportion as it escapes from the upper portion of the tube, renders the action of the exhausting syringe above needless. In other words, the action of the capillary vessels, by which they "are constantly forcing blood *into* the veins, as fast as it flows *out* of them by other causes," would be sufficient to carry on the venous circulation, aided by the other forces which we know actually to exist, without the necessity of an aspiratory action in the heart. We do not wish to be understood, however, as positively denying to the heart such an action; on the contrary, we believe that many circumstances render it necessary for us to include, among the numerous forces by which the return of the blood through the veins is effected, the active dilatation of the central organ of circulation; but we object to the validity of many of the arguments by which the latter fact is attempted to be established.

Chapter xv. treats of Respiration, which, according to the arrangement adopted in the First Lines, constitutes the third and last of the vital functions. After an anatomical description of the organs of respiration, which we consider unnecessary in a work like the present, the mechanism of respiration is examined, then the chemical phenomena connected with the function, and finally the vital part of respiration. Under which heads the author presents, in his usual happy manner, a very full exposition of the present state of our knowledge in relation to each of those particulars. In summing up, in the ensuing section, the theory of respiration, we are presented with the opinions of the more eminent physiologists, without any attempt on the part of Dr. O. to bias the mind of the reader in favour of either. In the concluding section of this chapter, a very able view is presented of the influence of innervation upon respiration.

We come next to the Nutritive Functions. On the subject of Digestion, the author has consulted, with commendable industry, nearly all the recent facts and experiments which are calculated to throw light upon this important but mysterious function, and the general conclusions which he has drawn from a collation of them, are, in our opinion, sound and interesting. Recognising the solvent properties of the gastric juice, which indeed cannot now be doubted, Dr. O., nevertheless, discountenances the idea so generally entertained, that these properties are of a specific character. On the contrary, he very properly explains them by the evident composition of the fluids of the stomach secreted during digestion.

"The solvent powers," he remarks, "of this secretion, (the gastric juice,) in relation to alimentary substances, may be understood, in part, by a reference to its composition. Thus, the water which it contains dissolves several simple alimentary principles, as liquid albumen, gelatin, osmazome, sugar, gum, and starch. The hydrochloric and acetic acids dissolve several other principles which are not soluble in water; as concrete albumen, fibrin, coagulated caseum, gluten, and gliadine, a substance analogous to gluten. These acids dissolve, also, cellular tissue, membranes, tendons, cartilages, and bones. Their solvent power is assisted by heat; and, hence, the temperature of the stomach is an important agent in gastric digestion."

Notwithstanding the circumstance of all kinds of solid aliment being, immediately after their admission into the stomach, subjected to the solvent action of the gastric fluid, and by it reduced to a semi-fluid state, while alimentary substances immersed in the gastric fluid out of the stomach, are likewise dissolved and converted into a substance presenting many of the characters of chyme, and, notwithstanding it is very evident that this action of the gastric fluid upon the food is essential to its perfect digestion, yet Dr. O. does not agree with those physiologists who suppose that gastric digestion is nothing but a mere chemical solution of the aliment in the proper fluid of the stomach, and so far we entirely coincide with him.

"Chymification," he remarks, "is not to be regarded merely as a chemical solution of alimentary matter in the gastric fluid. No doubt a solution more or less perfect may be effected in this way by the solvent powers of this fluid over substances of an alimentary kind. This is established by the experiments of Spalanzani, and more fully by those of Beaumont. But it is not so certain that they become enduedwith all the properties of chyme, especially with those which assimilate them to the nature of the living animal body, by undergoing this process. Le Pelletier affirms, that in the experiments which he had made with food thoroughly masticated and blended with saliva, penetrated with the gastric fluid, and placed in favourable circumstances out of the stomach, he always found the food either reduced to a pulpy mass or simply softened, or in the incipient stage of acid or putrid fermentation, but never in a state of *perfect chyme*, as was proved by introducing the artificial chyme into the duodenum of living animals, when it was found that not a particle of real chyle was ever formed from it."

We confess that we should not place much importance on such an experiment as a means of settling the present question; yet there are sufficient reasons, in our opinion, for believing that the food undergoes other changes in the stomach than those effected in it by the mere action of the gastric fluid.

"It is indeed difficult to conceive," as our author has well remarked, "how a mere *chemical* solution of aliment can endue it with living properties, or *vitalize it;* for, undoubtedly, chyme is in the first stage of animalization. It cannot become invested with living powers, if placed out of the *atmosphere* of vitality. Vital affinity can operate only within the sphere of vital power. If, then, the gastric fluid is a mere chemical solvent of alimentary substances, it seems probable that the living coats of the stomach, with which all parts of the food are brought successively into contact, may impart to the latter certain properties which may assimilate it to the nature of the living organization, properties which it is impossible to conceive that it can acquire, when removed from the contact of living matter. Life is a unit, its properties cannot be separated from the source where they originate. It is as impossible to conceive of bottling up a portion of vitality with a few ounces of gastric fluid, as it would be to think of corking up a vial of sunshine, and keeping it in the dark.

"The analysis of digestion, proposed by Prout, corresponds in the main with this view. Prout attributes to the stomach three distinct powers, which are all exerted in digestion, viz., a *reducing*, a *converting*, and a *vitalizing* power. By the reducing power, he means the faculty which the stomach possesses of dis-

solving alimentary substances, or bringing them to a semi-fluid state. This operation he supposes to be altogether chemical. By the converting power of the stomach, he means the faculty of changing simple alimentary principles into one another, as starch into sugar and gum. Without such a power, Prout thinks that the uniformity in the composition of the chyle, which he supposes to be indispensable to the existence of animals, could not be preserved. This process of *conversion* he considers, also, as chemical, but as of more difficult accomplishment than the reducing. The vitalizing or *organizing* property, is that by which alimentary substances are brought into such a condition, as adapts them for an intimate union with the living body. This power, he says, cannot be chemical, but is of a vital character, and its nature is entirely unknown. The vital properties which the chyme acquires in the stomach, whatever these properties may be, it is the prerogative of the living or the nervous powers of the stomach to confer. The influence of these powers in digestion, is illustrated by numerous facts, especially by the influence of those medicinal agents which depress the nervous energy, as opium and other narcotics; the effect of passions of the mind, and the sudden accession of disease; and intercepting the nervous influence by the ligature or section of the parvagum; causes which can hardly be supposed competent to destroy the chemical or solvent powers of the gastric fluid, but which, nevertheless, are well known by physiologists to interrupt or weaken the process of gastric digestion."

The views of Prout in relation to digestion will be found, we apprehend, to be in the main correct. In the investigation of this process the attention of physiologists has been heretofore too exclusively confined to the sensible changes effected in the aliment within the cavity of the stomach, all of which have been very generally referred to the solvent action of the gastric fluid. Digestion, properly speaking, commences in the mouth; there can be little doubt that the processes of mastication and insalivation, though but very cursorily noticed in the work before us, effect important changes in the aliment preparatory to its conversion into chyme.

It must also be borne constantly in mind that besides being subjected to the solvent action of the gastric fluid, most alimentary substances undergo likewise in the stomach a very decided change in their chemical composition. How this change is produced is still a matter of dispute—no one, however, has as yet even attempted to prove that it results from the action of the gastric fluid.

The solution of the food is not, as some suppose, confined solely to the stomach; recent experiments have on the contrary shown that the fluids of the small intestines possess properties similar to those of the gastric fluid.

In the stomach, and along the entire course of the small intestines, the dissolved aliment is acted upon by numerous absorbents, which have the power of selecting from it certain of its principles, to be converted, by the agency of vital chemistry, into the component parts of the blood. This absorption, which is the most actively carried on in the upper portion of the intestinal tube, is in our opinion one of the chief agents in effecting the more important of the changes which we know to take place in the food after its introduction into the stomach. It is more than probable, also, that from the various secretions with which the food becomes mixed in the alimentary canal, certain principles are derived essential to its complete assimilation. But we must here close our remarks on this subject, which have been already extended further than we at first intended and the character of the

present notice of Dr. Oliver's work warrants. We shall only add, that although the account of the digestive process presented in the work before us is tolerably full and correct, the author has nevertheless neglected to notice a few very interesting facts in connexion with it, for which we are indebted to the investigation of recent physiologists. The sections which treat of chylosis and absorption are more complete; we notice nothing of any importance that has been omitted upon either of these subjects. We cannot, however, admit the truth of the following proposition.

"It (chyle) is absorbed by these vessels (the lacteals) from the aliment, after it has been digested in the stomach and duodenum, and is destined to the renovation of the blood."

We deny that chyle is ever found formed in the intestines. All the elements of which it is composed no doubt exist in the chyme of the duodenum, but it is the office of the lactaels to select and combine these elements; in other words, the chyle is formed by the lacteals themselves. In fact the author himself recognises the truth of this statement in a subsequent chapter, as we shall hereafter see.

Immediately connected with digestion are the biliary and pancreatic secretions, which are consequently treated of in the present chapter.

The different views of physiologists in relation to the former are clearly and accurately stated, the reader being left to adopt whichever of them he may deem the most plausible—a course by far the most judicious, when the subject is, like the present, so completely unsettled. There are indeed few of what are asserted as some facts in relation to the physiology of the biliary organs which are not strenuously disputed by authorities of considerable eminence.

That the bile is in no degree essential to perfect chylosis we consider to be established by uncontrovertible evidence; the manner, however, in which Dr. Oliver states the opposite opinion, is such as to lead us to believe that it is the one adopted by him. In chapter xvii. he remarks "that no other substance but chyme, which has been acted upon by the bile and pancreatic fluid, is capable of being converted into chyle." Numerous instances could however be cited in which chylosis took place with perfect regularity, without the possibility of a particle of bile being mixed with the chyme. Dr. O. also observes that "it is probable, and indeed certain, that a part of the bile secreted is immediately absorbed by the lymphatics, and conveyed into the thoracic duct." This proposition is very loosely expressed. It is highly probable that the chyle may receive some principle from the bile by which its assimilation is promoted, and it is certain also that the aqueous and some other parts of the bile are taken up by the lymphatics; but if it is meant by Dr. Oliver that any portion of the bile itself is absorbed by the lymphatics, or is found in combination with the chyle under ordinary circumstances, we believe that he will find it very difficult to adduce any satisfactory evidence in support of his position. With Tiedemann and Gmelin, and numerous other physiologists, we consider the bile, whatever office it may perform in digestion, chiefly in the light of "an important excretion, designed to maintain the blood in a state of composition necessary to qualify it

for nutrition in the different organs." This inference is fairly stated in the work before us, and a summary given of the reasons upon which it rests.

The section on food is interesting, and, so far at least, as regards general principles, correct. Much more might have been said with great propriety under this head, having a direct bearing upon the subject of digestion. It is curious that the author has neglected to consider both thirst, which is a physiological appetite, and drinks, a constant supply of which is more essential to the healthy condition of the organism than of food.

Absorption is treated of in chapter xvii. The various absorptions which take place regularly in the human body are divided by our author into *alimentary, respiratory, interstitial, recrementitial,* and *excrementitial.* The first of these occurs in the alimentary canal, and separates from the food, after its solution by the gastric juice, such principles as are capable of furnishing materials for the renovation of the blood, and through it of the several tissues of the body. The agents of this absorption are the lacteals.

"These vessels," remarks Dr. O., "exert a peculiar vital action upon the chyme in the intestinal cavity, selecting, absorbing, and combining its nutritive principles, and converting them into a much more highly animalized fluid, termed chyle."

The following statement is at once correct and important, and accords with the views expressed by us when considering the author's account of stomachic digestion. It is somewhat strange that Dr. O. should have overlooked entirely the facts here stated when drawing up his chapter on digestion, upon which process they in our opinion throw considerable light.

"Absorption takes place throughout the whole alimentary canal. Even in the mouth the absorbents imbibe some part of the food, as is evident from the effects of wine or spirits held in the mouth. It is probable also that the absorbents of of the œsophagus imbibe something from the aliment during its passage through this tube. The lymphatics of the stomach are found to be turgid during digestion. But, the chyliferous absorbents of the small intestines are particularly active during digestion in imbibing the nutritious chyle. These vessels diminish in number in the inferior portion of the small intestines; but some are found in the large intestines, and their effects are evident in the increasing density and consistency of the contents of the lower part of the alimentary canal. In horses and some other animals the absorbents of the large intestines are observed to be filled with a chylelike fluid."

After a very complete exposition of the leading facts connected with alimentary absorption as carried on by the lacteals, the author proceeds to consider the opinion of those physiologists who maintain that the absorption of chyle and of other substances from the digestive canal, is effected also by the veins. The various facts and experiments which have an immediate bearing upon this point are concisely stated; and in such a manner as to present to the reader a very full and accurate view of the subject.

The scarcely legitimate term *respiratory absorption* is applied by Dr. O. to "the introduction of an aerial principle, essential to life, into the mass of the blood," in the process of respiration. Whether the term absorption can, in its ordinary physiological sense, be applied

to the process of aeration which the blood undergoes in the lungs, will admit of dispute: the question is at least so far unsettled, as to render the assumption of the fact improper.

The subject of interstitial, or as the author terms it when he enters upon its particular consideration, *internal* absorption, is introduced by the following remarks.

"From the analogy in structure of the lymphatics with the lacteals, which unquestionably absorb a nutritive matter from the intestines—from the lymphatics constituting a part of the same system of vessels, and from the universality of their distribution, it has been inferred that their office is to absorb and to convey to the circulation the elements detached from the organs, and certain principles separated from the secreted and excreted fluids. The direct proofs of this function of the lymphatics, however, are not perfectly conclusive; and one of the most eminent physiologists of the age considers the general doctrine as resting on insufficient grounds."

Such being the state of the question in relation to internal absorption, Dr. O. very properly presents to his readers an abstract of the more important facts in favour of this function being performed by the lymphatics, followed by a sketch of those which favour the opinion that the veins are concerned in it equally with the lymphatics; and finally, the reasons which have induced several distinguished physiologists to believe that the substances which are proved to find an entrance into the veins are not absorbed by the mouths of these vessels, but penetrate through these coats by *imbibition*. From a review of the whole subject, the author draws the following conclusions.

"It appears, on the whole, that the subject of venous absorption is involved in no little obscurity, though the facts and considerations in favour of this alleged function of the veins appears to preponderate over those of a contrary tendency. Whether, however, substances which obtain an entrance into these vessels are absorbed by open orifices, or are imbibed by their coats; or whether they find their way thither by both these avenues, is a question of secondary importance. The great fact seems to be fully established, that many foreign substances find their way into the system principally, if not exclusively, by this channel; and whether they owe that prerogative to a vital or a physical cause, is evidently of no consequence, since in either case the result, as far as we know, is the same, and the means of effecting it were undoubtedly not a matter of accident, but of choice."

Chapter xviii. treats of secretion. Dr. O. defines secretion to be "the vital action of the secretory organs upon the blood, by which they extract from it and combine together the elements of a fluid, which had no existence in the blood previous to this elaboration." In some instances, however, secretion would appear to be nothing more than the separation of some element or principle already existing in the blood, as the author has himself remarked.

"If it could be proved, however, that all the substances of which the secreted fluids consist pre-existed in the blood, it would not follow that the process of secretion is a mere mechanical separation of these from the blood. It would still be necessary to suppose some peculiar elective power in the vessels of the secretory organs, by which the peculiar secretion of each gland should be separated from the mass of the blood, and collected in the excretory vessels of the gland."

It is nevertheless a curious fact recently demonstrated, that the membranes even after death, either from the peculiarity of their organization, or some other cause with which we are totally unacquainted, have the power of giving transmission to certain fluid substances

and of rejecting others, exerting apparently the very election which Dr. O. has attributed solely to a vital action. There is evidently much yet to be learned on the subject of secretion, but we believe that the time is not far distant when a good deal of the mystery which now surrounds it will be removed.

A very excellent general description is given in this chapter of the different apparatus by which secretion is effected.

The secreted fluids the author classifies:—1st. According to their compositions; 2ndly, according to their uses; 3dly, according to their consistency; 4thly, according to the structure of the organ by which they are secreted.

In relation to their composition the secretions are divided into the serous, the albuminous, the mucous, the fat or oily, and the mixed.

In respect to their uses the secretions are either *recrementitious*, or those destined to be absorbed and returned into the mass of the blood; and the *excrementitious*, or those which are in part or wholly discharged from the body.

In regard to secretions the author notices two interesting remarks, the first made by Berzelius, and the second by Tiedemann. The former observes that the secretions destined to be employed within the body for particular purposes are alkaline; while the excretions, or those destined to be evacuated, are all acid. To the excretions are referred the urine, the fluid of perspiration, and the milk; all the others are included among the secretions.

"Tiedemann observes that between the secreted and excreted fluids there exists this difference, viz. the former contain globules, or organic molecules, of which no traces can be discovered in the latter. Thus globules have been found in the saliva, the pancreatic and the spermatic fluids, and the milk, which he ranks among the secretions; while none have been discovered in the urine, the bile, the tears,'&c. The bile and tears, it will be observed, Tiedemann assigns to the excretions."

In relation to their consistency, the secreted fluids are either *aeriform* or *liquid*. To the first belong the exhalations from the skin and the organs of respiration; to the latter, all the other secretions.

"The secreted fluids, considered in reference to the structure of the organs by which they are prepared, may be divided into three classes, viz. the *perspiratory* or the *exhalations*, the *follicular*, and the *glandular*."

In considering the individual secretions the author follows the latter classification, investigating first *cutaneous exhalation* or perspiration. The section devoted to this function is somewhat imperfect, several important facts connected with cutaneous exhalation being either totally omitted, or only incidentally noticed as of secondary importance. The supposition that the skin performs a function somewhat analogous to respiration, is rendered very probable by the results of recent investigations, and deserves a more extended notice than the author has thought proper to give to it, in a marginal note of only five lines.

In the section devoted to *mucous exhalation* it is stated that "in the stomach the product of this exhalation is termed the gastric fluid, which is possessed of peculiar properties, and is the great agent of

chymification." This is not strictly correct. Whatever may be the agency of the gastric juice in chymification, it is very evident that that fluid is not, as is here declared, identical with the ordinary mucous exhalation of the stomach; the secretion of the latter is constant, whereas the former is secreted only when food is taken into the stomach, or some stimulus is directly applied to its lining membrane. In the intervals of digestion the mucous secretion of the stomach is a clear, slightly opaque, ropy fluid, destitute of acidity, and when mixed with the masticated food out of the stomach, exhibits no solvent powers. The proper gastric juice is a clear, transparent liquid, perceptibly acid to the taste, capable of coagulating albumen, resisting the putrefactive process and dissolving alimentary substances even out of the stomach. We have a right, therefore, to infer, that the mucus of the gastric cavity and the alimentary solvent are distinct secretions, furnished probably by different apparatus.

We have nothing particular to remark in relation to the account given by the author of the remaining secretions; it is, generally speaking, full and satisfactory. The following pertinent remarks which occur at the close of the section devoted to urinary secretion, open a wide field for speculation.

"It is worthy of remark, that after the old matter of nutrition is taken up by interstitial absorption and conveyed into the blood, this fluid is subjected to the influence of respiration *before* it is carried to the kidneys; and *after* being purified by respiration and converted into *arterial* blood, it is transmitted to the kidneys to be further purified by the separation of the principles of the urine. It is a curious circumstance that the kidneys, though depurative organs, operate upon *arterial blood* which has shortly before been purified in the lungs; and this blood, when purified by the separation of the foreign matters which may have been introduced into it, as well as of the old elements of nutrition furnished by the detritus, becomes *venous* blood, which must again be subjected to the action of the lungs before it can be employed for any other purposes in the animal economy. The blood, as it issues from the lungs, is perfectly adapted to the uses of the system; for we find that it is immediately transmitted to all the organs, to furnish the elements of nutrition, and of the secretions, and the necessary vital excitement. Yet we find that one-eighth of this blood is diverted into a particular channel, by which it passes to the kidneys, where it parts with certain principles which are noxious to it, and, if retained in the blood, are inevitably fatal in a short time. It is not very apparent why this particular portion of the arterial blood only should be subjected to the action of the kidneys, while all the remaining, and vastly the larger part, though equally impregnated with these noxious principles, is transmitted without this depuration to all parts of the body. Nor is it more apparent why, after undergoing this purification in the kidneys and parting with these noxious ingredients, it is rendered more unfit than it was before to administer to the wants of the economy, in being converted into venous blood and again requiring the action of the lungs to prepare it to subserve the uses of the system."

The subject of nutrition is examined in the nineteenth chapter. The account given by the author of this function is probably as satisfactory as could be expected, considering the obscurity by which almost every thing in relation to it is enveloped.

The next chapter is devoted to animal heat, and presents a very admirable outline of all that is at present known in relation to this important function.

With the thirty-first chapter commences the consideration of the

functions of relation. The physiology of the external senses, with the anatomy of their respective apparatus, occupying the five succeeding chapters.

This portion of the outlines is drawn up with no little talent; all the leading facts connected with the several subjects are succinctly noticed, as well as such of the views of distinguished physiologists as are particularly interesting, although their accuracy may not be considered as in every instance fully established. The author has, however, exhibited commendable caution in excluding from this and the other parts of the work all hypotheses which have not at least strong probability for their support.

The next subject treated of is motion, including of course the structure and functions of the muscles.

There is no part of the science of physiology that is involved in greater obscurity than are many of the points connected with the subjects treated of in the present chapter, or in relation to which it is so difficult to arrive at correct conclusions. Whether the muscles derive their power of contraction from the nerves that enter into their composition, or from an inherent and specific property of the muscular fibre itself? in what consists the essence or immediate cause of muscular contraction? why the action of some muscles is capable of being excited by the will, while that of others is totally independent of it? are questions which are still and will, probably, ever remain unsettled. What, however, is actually known in relation to muscular action, will be found to be clearly stated in the work before us, together with a brief notice of the more prominent hypotheses that have been framed in explanation of this function. The subject might, it is true, have been very readily extended to a much greater length, but we doubt whether such an extension would have the effect of shedding upon it any additional light.

There is one remark of the author which, we apprehend, may convey to his readers an erroneous idea.

"It is remarked above," he says, when speaking of the conditions necessary for the phenomena of muscular action to take place, "that the presence of vitality is a necessary condition of muscular contraction. It is to be observed, however, that certain of the muscles, both voluntary and involuntary, in some instances, *continue to act some time after death.* This is true, particularly of the heart and intestinal canal; but nearly all of them may be excited to contraction by artificial means. In the amphibia especially, as the frog and the salamander, the muscular irritability continues a long time after death. In birds, on the contrary, the irritability of the muscles is very soon extinguished, ceasing much earlier than in the mammalia and the human species.

"According to Nysten, the duration of the contractility of the muscles after death, in the different classes and orders of animals, is in the inverse ratio to the degree of energy with which the muscles are endued during life. To this principle, however, there are many exceptions."

We are aware that the physiological fact here referred to is expressed in a similar manner by many eminent writers; and although it will be readily understood by such as are conversant with the subject, it is not the less incorrect. A muscle, it is true, will, as we have ourselves repeatedly observed, continue to act for some time

after the *apparent death* of the animal, especially if it be artificially excited. But it is not true that this action will occur after the *death of the muscle*; in other words, after it is deprived of its proper vitality. The muscle must still possess a certain amount of excitability and irritability, the presence of which is impossible in the absence of organic life, or no contraction could take place in it spontaneously, nor be produced in it by artificial stimuli. We admit the possibility of certain functions generally considered to be immediately dependant upon life, absorption and excretion especially, taking place after the actual death of the organ by which they are executed; for there is reason to believe that they depend less upon actual vitality than upon peculiarity of organization, but we deny that proper muscular contractions can possibly occur after the death of the muscles.

On the formation of the voice, (chapter xviii.) Dr. O. has principally followed the account given by Magendie. The subject deserves a more close investigation; there are many important points connected with it upon which our information is extremely limited.

This chapter finishes the consideration of the first three classes of the functions, according to the arrangement adopted in the work before us; the fourth class, or the genital, is comprised in the succeeding chapter. The organs of generation in the two sexes are described with great accuracy. As we have already remarked, we consider these anatomical details altogether uncalled for in a work professing to be a mere compendium or first lines of physiology.

In regard to the much disputed questions, whether the male semen is merely deposited in the vagina of the female, or is injected into the uterus, Dr. O. is inclined to favour the latter opinion. "It appears to be ascertained," he remarks, "that the seminal fluid does in fact reach the uterus. Some physiologists, it is true, could never discover it in this organ after copulation; but others have been more successful." He gives the names of Haller, Ruysh, Dumas and Prevost. "These last mentioned physiologists admit that they have seen it even in the fallopian tubes." A very striking case is related by Dr. Bond of Philadelphia, in the number of the American Journal of the Medical Sciences for February, 1834, in which an examination was made of the uterus of a female who committed suicide almost immediately after coitus; the interior of the uterus was found to be thickly coated with a substance having the appearance and the strong peculiar odour of semen, and the fallopian tubes contained apparently the same matter. Dr. O. is of opinion further, that the conveyance of a portion of the male semen along the fallopian tubes to the ovaries is essential to impregnation. In the correctness of this opinion we concur.

"The extreme narrowness of the fallopian tubes at their uterine extremity affords no solid objection to this opinion; for we know that, at a later period, these canals admit of the passage of the impregnated ovum into the uterus; and besides, it must be considered that an exceedingly minute portion of the seminal fluid is sufficient for impregnation. It is also known that in plants the pollen of the stamina must traverse the vessels of the style, in order to produce fructification, and these canals are undoubtedly much narrower than the fallopian tubes in animals."

Under the head of theories of generation a very interesting sketch is presented of the most prominent hypotheses which have been presented to the world by ancient and modern physiologists, in explanation of the intimate and essential nature of this important process; as well as of the arguments adduced in support of each, and the objections to which they are severally liable.

The history of conception, of utero-gestation, and of fœtal life, though belonging strictly to the subject of physiology, are omitted in the work before us. The reason given by the author for this omission, because, namely, they are usually considered in treatises on obstetrics, does not strike us as altogether satisfactory. He might with the same propriety have omitted the physiology of the eye and the ear, because these subjects are always fully treated of in works on optics and acoustics.

The subjects treated of in the three remaining chapters are sleep, animal magnetism, and death. On the first of these we have nothing particular to remark; the section on dreaming and somnambulism, introduced under this head, especially the former, are extremely meagre and unsatisfactory. The chapter on animal magnetism appears to us to be altogether out of place in a book of *first lines*, like the present, which should be confined to an account of what is actually known, or at least extremely probable. Notwithstanding animal magnetism may have "attracted, of late years, a considerable degree of interest, in some parts of Europe," and notwithstanding "several distinguished men have enrolled their names among its disciples," yet the facts upon which its very existence is based remain still to be authenticated, while some of the phenomena which are described as its effects, can be satisfactorily explained without the necessity of supposing a magnetic influence to be exerted upon the individual in whom they occur. Many of the statements in relation to the wonderful effects of animal magnetism are, as Dr. O. himself admits, in the highest degree absurd and improbable. Thus—

"After a few trials, we are told, it is not necessary for the magnetizer to apply the hands at all to the other party. It is sufficient to order him to go to sleep, and he will immediately obey, without the power of resisting the commands of the magnetizer.

"In some instances he (the magnetizer) merely exerted a strong effort of the will, without even speaking to the subject of the operation, when the latter began to yawn and stretch, and manifest some of the other signs which precede sleep," and this, too, "even at a distance of several feet, and where the two parties were separated by a door or partition, and the patient had no suspicion of what was going on." We are told that "any of the limbs or muscles of the patient may be rendered completely paralytic by the will of the magnetizer"—"and before he can recover the power of moving it, it must be *deparalyzed* by the magnetizer"—and, recollect, that all this miraculous influence is exercised by a volition of the mind "and two or three gestures."

We are also told "that the magnetized sleeper does not appear to hear the loudest noises nor to see the brightest light. Even the report of a pistol, fired close to his ear, occasions no starting nor any other motion, nor does it prevent his carrying on a conversation already commenced in an unaltered tone of voice." But the most re-

markable circumstance is "that if the magnetizer touch the body of the sleeper with his hand, the latter immediately acquires the power of hearing and understanding the magnetizer, though he remains incapable of hearing any other person."

"It is also extremely remarkable, that the will of the *magnetized* seems to be entirely under the control of the magnetizer. It appears, indeed, to be nothing but an instrument in his hands, which he directs and uses at pleasure. The person magnetized acts only through him; his desires, his thoughts are influenced by him; even his muscles, and limbs, and senses become paralyzed at the command of the magnetizer. The latter can extract from him his most secret thoughts, and compel him to disclose facts or circumstances within his knowledge, affecting his own character or interest, or those of others, and which he may have the strongest motives to keep inviolably secret."

That under certain pathological conditions of the nervous system, it is not impossible for many phenomena, bearing a similarity to those described as the effects of magnetism, to occur, must be admitted; something approaching to them we know does actually take place during a state of somnambulism; but that these phenomena can be produced on one individual by the mere touch or volition of another—continue so long as he pleases, and immediately disappear when he wills them to cease, we have not, we confess, sufficient credulity to believe; and yet this it is which constitutes the very substance of animal magnetism.

We have devoted more space to a notice of the "First Lines of Physiology" than a work of this kind may, perhaps, be considered to merit. We were, however, so much pleased with the manner in which, taken as a whole, it is executed—the general accuracy of its contents, and the very masterly manner in which the author has digested and arranged the physiological facts and deductions which it contains, that we felt desirous it should be extensively known. As a text book or an introduction to the study of physiology, we know of none we can more highly recommend. We have noticed a few omissions which it will be proper to supply whenever a second edition shall be called for. D. F. C.

ART. XII. *Essai sur la Colique de plomb; thèse présentée et soutenue à la Faculté de Medicine de Paris, le 10 Juillet*, 1835. Par AUGUSTIN GRISOLLE, de Fréjus, Département du Var; Docteur en Medicine; Interne de l'Hotel Dieu; Membre de la Societé Médicale d'Observation; Titulaire de la Societé Anatomique; Elève lauréat de l'école pratique; Bachelier ès-sciences.

Essay on Lead Colic. By A. GRISOLLE, M. D., &c.

The above work, consisting of only about 80 quarto pages, is replete with valuable information. Most of the important and interesting questions connected with the history of the disease in question, are elucidated by a direct appeal to nature. The author presents us with a complete and exact analysis of the recorded histories of 58 patients affected with disease arising from the influence of lead. These

cases were collected by M. Grisolle in the year 1834, at the hospital Beaujon, in the wards of M. Martin-Solon. The majority occurred in workmen employed in the white lead manufactories in the neighbourhood of Paris. These establishments were frequently visited by our author, who examined with care the different processes of manufacture, in order the more fully to appreciate the various morbific influences to which the workmen were exposed. At the bed side, the previous history, the symptoms, and the effects of remedies were observed with the greatest care and minuteness, and noted on the spot. These various facts were then compared together, their similarities and discrepancies remarked, and conclusions arrived at by rigid induction.

This work is precisely of that kind which is best calculated at present to promote the interests of medical science. Its materials are fresh from the hands of nature; they are not confided to memory, but are at once recorded on paper; all vague impressions derived from general and loose observations are discarded; nothing is admitted except the most positive facts, and those conclusions which can be directly established from them,—such are the characteristics of this little work, in which is to be found more positive information than in many a bulky quarto. Our author has avoided, on the one hand, entering into loose discussions upon points purely hypothetical, in which imagination is usually appealed to rather than fact, whilst, on the other, he has taken care not to inundate us with a mass of crude and undigested observations of particular cases. He has analysed his observations, and given us, so to speak, their general expression upon every important point.

Of the various accidents which result from the absorption of lead and its different preparations into the system, those which belong to the digestive apparatus, are the most frequent. Next in order, are those which show themselves in the central nervous system, sometimes in the form of epileptic convulsions with delirium; at others, of paralysis of the limbs or organs of sense, &c.

Lead colic is characterized, according to our author, by acute abdominal pains, returning in paroxysms, and not augmented by pressure, accompanied by bilious vomiting, obstinate constipation, slowness of pulse, and finally cramps and other painful sensations, both in the upper and lower extremities. This order of symptoms, he thinks, never results from any other cause than the introduction of lead into the system, and hence the name of lead colic (*colique de plomb*) is peculiarly appropriate.

M. G. first inquires how far certain circumstances of season, climate, &c. may be considered as predisposing causes.

In order to determine the influence of seasons, he examined the records of the hospital Beaujon, where were treated the greater part of the workmen attacked with the disease in two manufactories of white lead, in the neighbourhood of Paris, those of Pecq and Courbevoie. The number of men employed in these establishments is nearly the same at all times; and the number of admissions from thence into the hospital were likewise found to be pretty equally distributed amongst

the different seasons of the year, so that it is probable, contrary to the usually received opinion, that they exert but little influence upon the production of the disease. All workmen who handle lead in any shape may be affected with it; but it is especially observed among painters and those who are employed in manufactories of white and red lead. The latter class, although few in number, furnish, nevertheless, a greater number of examples of lead colic than the entire population of painters and all the other trades, in which lead is employed, put together.

Age appears to exert a decided influence upon the degree of susceptibility to the complaint. Thus it was found that men under 30 years of age remained in the manufactories, on an average, 65 days before contracting the disease, whilst those who were over 50 years were attacked at the end of 37 days. Whether women are more subject to it than men, is difficult to determine, because the former are so little exposed to the causes which produce it.

Dr. G. is inclined to think that excessive use of alcoholic liquors tends to favour its production, but the facts collected by him, which bear upon this question, are too few to enable him to come to a positive conclusion. It has been supposed that red lead possesses more deleterious properties than white, and, hence, that the workmen in the former were more exposed than those engaged in manufacturing the latter; but this does not appear to be in accordance with experience. Thus, eleven individuals at the manufactory of Clichy, were able to work in red lead 73 days before being taken sick, whilst the average residence of 12 workmen in white lead, in the same establishment, was only 65 days. This result shows, then, that the red oxyde of lead does not exert upon the animal economy a more deleterious influence than the subcarbonate. The facts possessed by Dr. G., do not enable him to state with any certainty, whether the different processes adopted in the manufacture of these substances, are accompanied by different results upon the human economy.

There are three ways by which lead may be introduced into the system, viz: absorption through the skin and through the pulmonary and gastro-intestinal mucous membranes. Our author regards cutaneous absorption in this case, as very problematical, and, in support of his opinion, he mentions, among other proofs, the fact that Dupuytren was in the habit of employing the acetate of lead as a dressing for burns, under which circumstances he considered it as highly beneficial; and that, nevertheless, this illustrious surgeon, in the course of his extensive practice, had never met with a single accident which he could attribute to it.

The absorbing powers of the mucous membrane of the respiratory passages are very active, and hence, one would be disposed to conclude, *a priori*, that the preparations of lead may be introduced into the economy in this way; several facts seem to support this supposition. Of this class are those cases in which the disease is known to have been developed in persons who have slept in apartments freshly painted.

But our author thinks that the greatest number of palpable proofs are in favour of the opinion which supposes that the particles of lead produce their effect by being mixed with the saliva or food, and thus taken into the stomach. How often, says he, do we see the disease declare itself among those who have drunk of water which has remained some time in leaden vessels, exposed to the air. Still more often does it occur in those who have made use of wine adulterated with litharge. The acetate of lead given internally has sometimes produced the disease, according to the accounts of Chomel and others.

But in whatever way lead enters the human body, it is certain that this metal exerts a manifest action upon the tissues long before the developement of the symptoms of colic. In proof of this it is only necessary to mention, that those who have been employed for some time in the manufactories acquire a pallid or yellowish complexion and a jaundiced tint of the eye; others grow rapidly thinner without experiencing at the same time any derangement of the digestive organs, and without being exposed to excessive labour or any impoverished diet. The alteration in the colour of the skin was observed in two-thirds of the workmen. The period at which it was first perceived, varied from eight days to two months after their admission into the factories, the mean time being twenty-seven days. The nervous system is sometimes affected, and amongst other accidents, epileptic paroxysms are produced, which do not appear to differ from ordinary epilepsy, except in their much greater severity.

The deleterious influence of lead is not confined to man, for it is found that the cats and dogs which frequent the manufactories soon die. Horses and rats, however, do not appear to suffer.

An attack of lead colic is generally preceded by slight and progressive derangements in the functions of the gastro-intestinal organs, such as diminution or loss of appetite, pains in the belly, and a diminution in the number of alvine evacuations, which often become hard and of a very deep colour. The mean duration of the premonitory symptoms, in the twenty-nine cases where Mr. G. took notes of them, was nine days and a half. When the disease is fully formed, the abdominal pains become more intense and are accompanied by nausea, bilious vomiting and obstinate constipation; the urinary secretion is diminished and the pulse rather slower than natural. Pain in the abdomen is, of all the symptoms, the most constant, and that which best marks the commencement of the disease. In three cases only were these pains general over the whole abdomen; in the others they were mostly confined to one or two regions. Sometimes the pain is obtuse and constant, at others very severe and coming on at intervals. It was relieved by pressure in forty out of the fifty-two cases observed by Mr. G.; in seven it was not affected by it, and in the remaining five cases was evidently increased by this means. He considers these pains as altogether neuralgic, and does not admit the explanation which attributes them to partial distension of the digestive tube, owing to the interception of air in certain parts. Whenever the belly was examined, either during a paroxysm or afterwards, it was uni-

formly impossible, either through the medium of the eye or touch, to determine the existence of isolated and sonorous tumours, which, however, should be found, if the latter explanation was correct.

Retraction of the anterior walls of the belly has generally been considered as one of the characteristics of saturnine colic; but this symptom is far from being constant, and Stoll even asserts that he has rarely observed it. Of forty-six of the patients in whom this symptom was carefully sought after, there were thirty-one in whom the belly was of the natural form and size; in the remaining fifteen it was retracted, but generally to so trifling an extent that it was necessary to make a most cautious examination, in order to determine that it was so. Moreover, the retraction was never augmented during a paroxysm of pain however violent.

In every case the tongue was found moist, of a rose colour, but little thickened; in half the cases it was covered with a whitish or yellowish fur. In one patient it became dry, grayish and furrowed in the centre; this condition coincided with a frequent pulse and febrile heat. These symptoms disappeared at the end of twenty-four hours, and the tongue again became humid. Thus, these results are precisely the same with those arrived at by M. Louis, in his researches on typhoid fever.

The thirst was severe in one-sixth of the cases, but in the others was either entirely absent or hardly observable.

Vomiting occurred in thirty-two out of forty-six cases, and in all except two, the matters thrown up were of a greenish colour and excessively bitter. In the cases where this symptom was present, the mean duration of the disease was eight days. Those who were affected merely with nausea, remained five days under treatment; finally, those who presented no symptoms of gastric uneasiness, were restored at the end of four days and a quarter.

Lead appears to exert a sedative influence upon the circulatory system, the number of pulsations varying in the cases before us from 48 to 84 per minute, and in only three instances did it present more than its ordinary hardness.

The skin was always of a natural temperature.

The urine was diminished in quantity, of a reddish colour, and depositing a sediment, whilst at the same time, in one-fourth of the cases it caused a burning sensation in traversing the canal of the urethra. This last symptom, which was never very violent, was evidently owing, in one case, to the presence of acid in the urine, and was promptly relieved by the administration of alkalies.

In a little more than one-fourth of the cases, the spermatic cord and testicles were the seat of the most acute pain, the exacerbations of which coincided with those of the abdomen, of which they seemed to be only an extension.

The lower extremities were the seat of various painful sensations in three-fourths of the cases, whilst the upper were affected in only half and in a less severe manner. The loins also, were sometimes attacked with pain, which appeared to be the same in character with

that which belong to the muscles of the limbs; sometimes they were radiated in the form of bands like those which have their point of departure in the spinal column.

Two individuals were for the first time in their lives attacked with epileptic paroxysms after a short residence in the factories. They both died at the end of thirty-six hours. In both, the symptoms of colic had been so slight, that they were able to continue their work, and the epileptic attack came on suddenly. Here, evidently, it is impossible to attribute the convulsions to a sympathetic affect derived from the stomach or intestines; but we are obliged to admit the direct action of the lead upon the cerebro-spinal system.

A curious circumstance connected with the history of this disease is the occasional occurrence of amaurosis, a symptom, however, which never occurs, except in conjunction with others indicative of a disordered state of the brain, such as epilepsy, delirium, &c.

Dr. G. has only once noticed the occurrence of paralysis of the limbs during the patient's stay in the hospital, and then it took place in an athletic man, attacked for the first time with colic, accompanied with delirium.

This disease most commonly terminates favourably; in fact, death hardly ever takes place, except when epileptic or other symptoms referable to disease of the brain are present. Of the 56 cases observed by Mr. G., three died, viz: two of epilepsy and the third from an attack of Asiatic cholera. In the two first, the whole intestinal canal was examined with the greatest care, and there was nowhere found the least unnatural coloration, or softening or thickening of the tissues. These facts are in accordance with those published by Andral, Louis, Retz, and others. It is now, in fact, clearly established that the stomach and intestines of those who die of this species of colic, do not present the least trace of inflammation. It is worthy of remark, that in all the cases above alluded to, the treatment by drastic purges had been employed, and yet the mucous membrane presented no marks of the action of these irritating medicines. It has been said that the intestines are contracted in this disease, but the truth of this assertion is far from being proved, and Chomel thinks that this condition of the parts has rather been supposed to exist during life than observed after death. In both the cases who died with epileptic convulsions, the cerebral convolutions were found flattened, and the anfractuosities almost effaced; the consistence of the brain was diminished throughout, and in one case the spinal marrow was less coherent than natural. No trace of injection, of serous or sanguineous effusion was found in any part of the nervous centres.

The nature of lead colic has been a subject of much discussion, and our author does not hesitate to pronounce it a purely nervous affection. He finds ample proof of this in the absence of fever, in the intensity of the pain, which is relieved by pressure and is paroxysmal in its character, yet, at the same time that it often shoots along the known track of certain nervous ramifications; add to these, several symptoms which are described by Georget and others, as belonging

to the intestinal neuroses, such as a whitish tongue, obstinate constipation, burning sensation in passing the urine, &c.

He looks upon the nerves distributed to the intestines as the special seat of the disease. The supposition of its nervous character is further corroborated by the fact, that pathological anatomy does not reveal to us any lesion of the intestinal canal, and also by the happy results which uniformly follow the employment of narcotics and irritants. Inflammation of the intestines may, and doubtless does sometimes occur in the course of this disease, but only as a complication, and we agree with our author that it is impossible to maintain with any degree of probability its inflammatory nature.

Of the diagnosis we shall say nothing. The prognosis is generally favourable, except, as before observed, in those cases where cerebral symptoms make their appearance.

The treatment is either prophylactic or curative.

Prophylactic treatment.—It is highly important that the lead factories should be constructed so as to admit of free ventilation. Our author states that at two of the factories of Paris, which are built upon a flat, surrounded by hills, and so constructed as to admit but of imperfect ventilation, the mean term of residence of the men employed is about six weeks; whilst at Courbevoie, which is situated upon a hill, and well aired, they can generally remain three months before becoming sick. He recommends the enclosing some of the apparatus in boxes of wood, and the adoption of every means calculated to secure the workmen from the dust and emanations which are constantly rising. To these means may be added, on the part of the workmen, the frequent use of baths, the avoiding intemperance, which appears to increase the susceptibility to the disease, and the taking care not to enter the factories of a morning until after having eaten.

It has been stated by Gendrin, that the internal use of sulphuric acid, is an efficacious preservative against the effects of lead. The observations of our author do not confirm this assertion. He found that in one of the factories, those who made use of the sulphuric acid fell sick at the end of forty-nine days, whilst those who did not, remained forty-four days. In another establishment, (Clichy) seventy-six days was the mean term of residence of those who did not make use of the acid, whilst fifty was the term for those who did. Hence he concludes that sulphuric acid cannot be considered as a preservative; but on the contrary, that we should rather be disposed to attribute to it the property of favouring the deleterious action of lead. This latter supposition is further corroborated by the fact, that acidulated drinks, when long continued, so far from exciting, finally weaken the digestive apparatus.

Curative treatment.—Mr. G. thinks that it is impossible to adopt, in any disease, a uniform method of treatment applicable to all cases: that the disease before us is one in which an exclusive method would be less irrational than in most others, because the patients are generally placed under similar circumstances, as regards age, sex, condition of life, mode of contracting the disease, &c.; but that neverthe-

less, the disease often presented differences which it was important to notice in order to make useful modifications in the treatment. In the great majority of the cases which we are considering, purgatives and narcotics were employed, or in other words, the *method of la Charité, modified.* It is impossible to deny the success of this plan, of which opium and purgatives form the basework. In the cases before us, the purgative medicines were mostly given in enemata, which were made in the following manner, viz: senna in decoction, ℥j; sulphate of soda, mel mercurialis, āā℥ij; aquæ, q. s.

These enemata were administered either alone or at the same time with opium to sixteen patients. In every case there was marked relief at the end of from four to twelve hours after their administration —seven out of the sixteen were labouring under severe attacks of colic; they took during the whole course of treatment, the mean duration of which was five days and a quarter, six enemata and five grains of opium. The patients were considered as cured, when the pains in the belly had ceased; the stools were re-established, the appetite had returned, and healthy digestion perfectly re-established. In the other nine cases, the disease was mild, and was cured after a mean duration of four days and a quarter, four purgative enemata and three grains of opium having been given. In half the above cases, vomiting was present, but disappeared as soon as stools were obtained. It does not do to attribute the relief of the pain to opium alone, for in six cases it was not administered; and when it was given, it was not till after the constipation had been overcome, and partial relief obtained. In severe cases, where the constipation was obstinate, it was frequently necessary to give several enemata in succession, in order to produce a decided effect.

In six cases, purgative medicines were administered, both by the mouth and anus; here the cure was accomplished in seven days and a quarter. The purgatives employed were castor oil, generally combined with croton oil, and the oil of euphorbia. The croton oil given in doses of from one to three drops, never produced superpurgation. The oil of euphorbia was given in drachm doses, and almost always brought on vomiting, and sometimes without producing alvine evacuations. The patient experienced, whilst under its operation, a general uneasiness, which was in one case accompanied with fainting; hence, Mr. G. thinks that this purgative should not be employed. Besides, its effects are not constant; for at one time it acts exclusively on the stomach, at another on the intestines; and sometimes on both, without our being able to discover the cause of these differences.

In a few cases it was necessary to administer emetics. These were resorted to when the vomiting of bile was obstinate, the mouth bitter, the tongue covered with a thick fur, and the epigastrium the seat of uneasiness, rather than of positive pain. "I, (Dr. G.,) have never seen the vomiting resist the employment of from sixteen to twenty-four grains of epicacuanha; and in every case, the patients experienced decided relief after the operation of the medicine, although no alvine evacuation was produced." The emetic was given to six

patients, all attacked with the disease in its most severe form, but without complication of inflammatory action; the cure was accomplished in eight days and a fraction. In four cases it was found necessary to give up the use of purgatives, on account of their inefficacy, and because febrile symptoms developed themselves. Here general bleeding was employed. The blood when treated by proper reagents, furnished no sign of the existence of lead in it.

In two cases, a simple laxative treatment, combined with opium, was tried, but it was found difficult to re-establish the alvine evacuations, and more active means were finally resorted to; the cure was not accomplished until near the eleventh day.

The treatment by opium alone was followed by similar results.

In conclusion, our author observes that the patients treated on the evacuant plan, got well in the space of five days and a quarter, four days and a quarter, and eight days. He has never seen any other method followed by as beautiful results. In general, he prefers the administration of purgatives in enemata, rather than by the mouth.

Tobacco has been recommended in the form of fomentations to the belly, and in enemata, and doubtless is sometimes followed by good results, but its effects are so uncertain, and its administration so difficult and dangerous, that it should not be resorted to, except to relieve violent constipation, where other remedies have failed.

It has been stated by Gendrin, that sulphuric acid, given in doses of a drachm, to a drachm and a half, in three or four pints of water, will cure the disease in three or four days, and cause an evident amelioration of the symptoms as soon as the second day. In order to appreciate the effect of any plan of treatment in this disease, cases of a pretty severe character must be chosen, as the mild ones will get well under almost any plan of treatment. The sulphuric acid, as recommended by Gendrin, was tried in four severe cases, belonging to the series we are examining. In none of them was any improvement observable on the second day, and in two the abdominal pains were augmented. In a third, cerebral symptoms appeared, and in the fourth, the colic remained stationary. The treatment was consequently not persisted in, and a combination of the purgative and antiphlogistic methods was resorted to. Our author thinks that antiphlogistics are inapplicable to cases of simple lead colic, and that they should only be resorted to when inflammatory symptoms present themselves. These are to be judged of by the force and frequency of the pulse, the heat of skin, and the inefficacy of the purgative and narcotic plan of treatment. Tenderness on pressure, which, it will be recollected, was observed in five cases, is, he thinks, no indication for the employment of antiphlogistics, three of the five having recovered under the treatment of La Charité. The facts, however, collected by Dr. G., in relation to the antiphlogistic method, are too few to enable us to come to any positive conclusion from them. It has been adopted by Renauldin at the Hospital Beaujon, but in three cases which Mr. G. had an opportunity of observing there under the treatment of this physician, he was obliged to have recourse to opiates. Dehaën adopt-

ed the same method in the last century, but was obliged to renounce it. Chomel thinks that where antiphlogistics are relied upon, the duration of the disease is lengthened, and relapses are more frequent.

Whatever plan of treatment is adopted, the diet of the patient should be restricted; food should be given gradually, and not till after the symptoms have entirely disappeared. In the treatment of the cerebral symptoms, such as epilepsy, amaurosis, &c. purgatives, combined with blisters to the back of the neck, the temples, or scalp, were found the most efficacious. T. S.

ART. XIII. *Traité Clinique des Maladies du Cœur, précédé de Recherches Nouvelles sur l'Anatomie et la Physiologie de cet Organe.* Par J. BOUILLAUD, Professeur de Clinique Médicale à la Faculté de Médecine de Paris. Paris, J. B. Bailliére, 1835.

Clinical Treatise on the Diseases of the Heart, preceded by new researches into the Anatomy and the Physiology of that Organ. By J. BOUILLAUD, Professor of Clinical Medicine at the Faculty of Medicine, of Paris. 2 vols. Paris. J. B. Bailliére, 1835.

The name of Dr. Bouillaud must be familiar to most of our readers, as the author of a work on the epidemic cholera of 1832, of one on essential fevers, of another on encephalitis, and, lastly, as the editor and in part the author of a Treatise on Diseases of the Heart, published as the result of the joint inquiries of MM. Bertin and Bouillaud. The last named work was principally due to the individual labours of M. Bouillaud; a few chapters only were written by M. Bertin. Since the publication of this work on diseases of the heart, M. Bouillaud has added largely to his reputation and to his experience. He has become professor of clinical medicine at the faculty of Paris, where he was the successful competitor of Louis and Rostan, both men of more mature age and of the best established professional reputation.

The position of M. Bouillaud at the school of medicine, placed him under favourable circumstances for the prosecution of his researches. He has fully availed himself of these facilities, and has cultivated pathological science with ardent devotion, more especially in connexion with the diseases of the heart. The new facts which he has collected are so numerous that he has entirely rewritten his original work, and has so much enlarged the subjects formerly treated of as to give a character of originality to the whole treatise.

Some of the diseases of the heart, especially the inflammation of its internal membrane, have been so much more thoroughly investigated by Dr. Bouillaud than they had been by previous observers, that the knowledge of these affections may be said to date from his labours.

The earlier works of Dr. Bouillaud do not always indicate accurate habits of observation, but the productions of his mature age have been formed under happier auspices. A more correct method of observation has become general; an author scarcely ventures to confine himself to the crude ideas which were too often admitted into medical works under the stamp of a name of eminence in science. The labours of the accurate school of Louis and Andral have been generally appreciated; M. Bouillaud has felt this happy influence, and has laid aside the prejudices which for a time diminished the respect he now feels for his able competitors. The observations contained in the work on diseases of the heart, especially those which are dated within the last five years, bear the impress of truth throughout their details, and are generally as complete as an accurate observer would require. The facts are analyzed with skill, and, while numerous important deductions are made from them, the limits of strict logical inference are rarely overstepped. In a few instances, the author may have been carried away by his enthusiasm and ardent desire of simplifying an obscure subject, so far as to become blinded to exceptional and contradictory facts; but these faults are neither too numerous nor too glaring to prevent us from fully appreciating the high excellence of the work.

The general features of the work offer some other exceptionable points; it is too diffuse to be as generally read as it deserves to be. The effort of working our way through two octavo volumes, is a rather formidable task, requiring some moral courage and a strong desire for truth. The number of new medical works is annually increasing with such rapidity, that it is almost a matter of conscience to narrow the limits of each monograph to the exact space necessary for expressing all that is useful, but nothing superfluous. Dr. Bouillaud has not always thought of this necessity; his book has evidently not been subjected to that laborious pruning which rejects every redundant word, and spares the reader the trouble of analysis. If we were inclined to be still more censorious, we should object to those frequent allusions to his own observations and that overweening anxiety lest a single new or enlarged idea should perchance be attributed to any but the rightful proprietor. We are strong and constant advocates of the doctrine that in science, as in arts, the honour of each discovery ought always to be rendered to the original author, but it seems indicative of a needless and over sensitive vanity, to watch earnestly over the property of isolated and in themselves unimportant facts, when the high and undoubted merit of enlarging the limits of science and rendering clear and positive much that was obscure and doubtful, is uncontested. We ought not to insist upon this harmless exaggeration of a vanity, usually regarded as a national peculiarity, but we should welcome the work with the praise it so amply merits.

The expression "disease of the heart," was once appropriated to a succession of most painful symptoms, necessarily terminating in death. This association is not yet completely broken up in the

minds of practitioners, and is still firmly rivetted in the opinion of the patients who suffer from those distressing affections. The idea that disease of the heart was necessarily mortal, rendered practice inefficient; lesions which were from their nature incurable, gave rise to painful symptoms which might have been alleviated by the physician, and functional disorders of the heart were often allowed to pass into organic affections. The error is, therefore, a capital one, and involves consequences of the highest importance; more especially, as the diseases of the heart, from their frequency and the extreme sufferings to which they give rise, are always classed amongst the most dreaded of those maladies which form the chief outlets for human life. Humanity is, then, under deep obligations to those physicians who, by their untiring industry and happy method of rendering their facts useful, have placed the diseases of the heart in a new point of view, and have shown that they are often curable, almost always to be alleviated, and, in most cases, may be prevented by an appropriate mode of life.

It would be an interesting study, to trace the progress of the knowledge of diseases of the heart from the imperfect state in which it long remained, down to the present advanced state of pathology. The cardiac affections were, until recently, so obscure, that in some cases they were completely overlooked, and in numerous others were classed under the vague denomination of disease of the heart. At the present time, a new field has been opened, the various improved means of examination, and the more accurate researches in pathological anatomy have rendered the lesions of the heart nearly as well known as those of the lungs, and have given us tolerably sure rules of treatment.

The knowledge of cardiac disease, down to the time of Laennec, was confined to a correct appreciation of the general symptoms, and to the description of the pathological changes found after death; the anatomical lesions were not often distinguished, one from the other, during life. The discovery of auscultation, by Laennec, which furnished a new and sure means of diagnosis, rendered the affections of the heart more interesting, and far more easily recognised than most diseases. Still the means of diagnosis were comparatively so few, that until the physiological action of the heart had been studied by Dr. Hope, aided by the labours of other physicians, its pathological condition could not be clearly recognised. The inquiries of Dr. Bouillaud have added largely to the means of diagnosis already possessed, and have thrown much light on the causes of diseases of the heart and their connexion with other affections of the body.

The progress of medical science relative to the diseases of the heart has thus followed its usual course. The attention of the earlier exact observers was chiefly bestowed upon the study of anatomical lesions, and afterwards on the improved methods of diagnosis, which were more and more perfected by each successive pathologist. Last of all, they attained a correct knowledge of the most frequent causes of disease of the heart, and a tolerably sure possession of the best means of cure

or palliation. There is nothing in this gradual progress of science which is peculiar to diseases of the heart, the same succession of facts must be pursued to become familiar with the diseases of other organs, and just in proportion as our knowledge of the pathological anatomy of organic disease is accurate, will we be enabled to relieve or to remove the painful symptoms caused by the anatomical lesions. This power is the direct consequence of improved pathology, but its secondary influence extends to the early symptoms of disease which precede the formation of organic lesions, and to the chain of morbid phenomena which gradually increase in severity until they terminate in death. An acquaintance with the causes and the earlier stages of disease is the most important result of the physician's labours, and, when perfected, is the ultimate limit of medical skill. The work under review is one peculiarly happy in the constant tendency of its inquiries towards a knowledge of the primitive affections of the heart, which terminate in frightful organic lesions destructive of life, after years of severe suffering. It is not confined to the diseases of the heart, for the author demonstrates more clearly than was ever done previously that many of these primitive diseases are themselves accidental lesions, developed during the course of rheumatism or gout. It will, therefore, we are convinced, prove most instructive to the practitioner.

The author commences by a description of the normal anatomy of the heart. He has given especial attention to the internal membrane of this organ or *endocardium*, which is not unfrequently the seat of inflammation, terminating in the formation of plastic lymph, and in the end giving rise to disease of the valves. This membrane, in the natural state, resembles the serous coats, and, when inflamed, the morbid product is very similar to that furnished by the pericardium, but, from the constant motion of the heart, and the rapid passage of the blood over the membrane, the lymph is washed away before it has time to accumulate in large masses.

Next follows a series of observations in relation to the size and weight of the heart. These observations are divided into three classes: 1st. Those in which the heart seemed about the natural size; 2nd. Where there was an increased developement of that organ, and thirdly, where it was of less dimensions than usual. In the adult from twenty-five to sixty years, the mean weight of the heart is eight or nine ounces, (equal to nine or ten English ounces.) Between the ages of sixteen and twenty-five years, the weight may be an ounce or two less. If the individual be very large and muscular, the heart may weigh ten or twelve ounces, (French.) The heart in women is a little lighter than in men.

M. Bouillaud has found that the transverse diameter of the heart differs in the normal state very little from the vertical. The thickness of the left ventricle at the maximum was eight lines, the minimum five lines, and the average thickness six lines. The thickness of the right ventricle, measured at its base like the left, was, the maximum $3\frac{1}{2}$ lines, minimum $1\frac{1}{2}$ lines, average $2\frac{3}{4}$. His observations accord with

those of other writers, that the capacity of the right ventricle and right auricle is a little greater than that of the cavities on the left side of the heart. We have not entered into all the details cited by M. Bouillaud, and think a full statement the less necessary, as the measurement of the heart and arteries, with other points of pathological anatomy, have been fully and most elaborately investigated by M. Bizot, of Geneva, whose results will shortly be published at Paris.

The mensuration of the heart by percussion on the exterior of the body, is one of the most important amongst the improved methods of investigation, which modern research has furnished to medicine. Percussion is made by striking upon the fore-finger of the left hand, or any other pleximeter. By carefully proceeding from right to left, and afterwards percussing the præcordial region in a vertical direction, the extent yielding a dull sound may be estimated with entire accuracy, and any deviation from the normal limits (one and a half to two square inches) may be correctly known. From our own observation in diseases of the chest, we place the greatest reliance upon percussion as a means of estimating the dimensions of the heart; it is easily performed and mathematically accurate.

M. Bouillaud thinks the sounds of the heart, in a normal state, are produced entirely by the closing of the valves. This opinion is universally admitted, as regards the second or the sharp clacking sound formerly ascribed to the contraction of the auricles. But there is still some difference of opinion respecting the first or prolonged murmur which Dr. Bouillaud and some others ascribe to the closing of the auriculo-ventricular valves. Whatever opinion may be finally adopted by the physician respecting the immediate cause of both the sounds of the heart, it should be remembered that all the recent experimenters agree that the first, or prolonged sound, is produced during the systole, and the second, or sharp clacking sound, during the diastole of the heart. This fact is to be recollected when we examine the morbid sounds of the heart.

Passing over the author's account of the various alterations produced by disease in the impulse and sounds of the heart, we shall examine his opinions as to the cause of the bellows sound which may arise in the following circumstances.

1. "I have observed the bellows sound in several patients, in whose hearts we found, after death, large fibrinous concretions, evidently formed during life." We agree with the author in the truth of this remark. We have had occasion to verify it at the hospitals of Philadelphia, in subjects, of whom one or two had offered at the same time traces of inflammation of the lining membrane of the heart. That this sound most frequently accompanies the formation of these concretions, seems rather doubtful; at least I have seen patients under similar circumstances, in whom there was a confused, irregular sound of the heart, but no bellows murmur.

2. "I have heard the bellows sound in cases in which the orifice of the aorta was manifestly more contracted than natural, although the semilunar valves were entirely healthy." This lesion, which is usually

connected with hypertrophy and dilatation of the left ventricle, I have often witnessed, and in these cases I have verified the existence of the bellows sound during life.

3. The author has heard the bellows sound in cases in which the valves of the heart were covered with bony or cartilaginous patches, without evident contraction of their orifices.

4. The same sound was detected in cases in which the auriculo-ventricular valves adhered to the sides of the heart. The adhesion thus formed prevented the complete closing of the valves. We examined a remarkable case of the same kind at the Pennsylvania Hospital, about two years since.

5. Dilatation of the orifices of the heart, accompanied by a contracted, shrivelled state of the valves, which have lost the power of unfolding themselves, is another common cause of the bellows sound. This variety we have often met with.

6. The bellows sound, as the author remarks, is frequent in persons who have a moderate hypertrophy of the left ventricle, after excessive fatigue, excitement of the mind, or other causes capable of producing palpitations.

7. Chlorotic, nervous patients, sometimes offer a well marked bellows sound of the heart.

8. Excessive loss of blood will give rise to the same morbid sound of the heart. This is easily verified in women who have lost much blood from flooding, in patients severely wounded, &c.

From the preceding inferences of Dr. Bouillaud, to which might be added some cases of fever and other diseases not originally affecting the heart, it is evident that the bellows sound may be heard in all cases in which the blood is driven through the arterial orifices with such force as to produce a decided friction. To this friction, the author refers the bellows sound, and we agree with him; for as the bellows sound is but a mere modification of the valvular or natural sounds of the heart, not a new sound, it varies indeed in different cases, but still always possesses sufficient permanency to enable us to identify it. The rasping sound is but a modification of the bellows murmur, owing to bony or calcareous deposites upon the valves; in its causes it does not essentially differ from the bellows sound, except from the roughness of the contracted or dilated orifices of the heart.

We may remark in passing, that these morbid sounds may depend upon the frequently contracted orifice of diseased valves. Whenever a valve becomes thickened, either from a deposit of new matter between its coats, or from vegetations upon its surface, it is necessarily rigid, and cannot dilate so perfectly as to allow the blood to pass freely through it. Its rigid, unyielding surface loses the essential quality of a valve, and offers a permanent obstacle to the passage of the blood. The very same rigidity prevents it from completely closing when the stream of blood should be cut off; hence some reflux of it generally takes place. When a valve adheres to the walls of the heart or to the surface of the vessels, it offers the only example of real dilatation during the period of closure, with-

out a corresponding contraction, when the valve should open, but as the morbid contraction modifies the natural sound of the heart in a much more important manner than its permanent dilatation, it is very easy to confound contraction of the valve with its dilatation. This error may to a great degree be obviated, by attention to the precise situation of the morbid sound, and to the *time* of the heart's pulsation at which it occurs.

The alterations in the rhythm of the heart have long been regarded as amongst the most certain signs of disease of the valves. M. Bouillaud does not restrict modifications of the natural rhythm to valvular disease alone, but he includes cases in which the internal membrane of the heart was inflamed. There seems to be no constant connexion between the varieties in the rhythm and the particular diseases of the valves.

The morbid sounds yielded by the arteries, afford some points of interest which are well pointed out by Dr. Bouillaud. These sounds are of three kinds, all nevertheless connected with the bellows murmur. The first is the simple bellows sound; the second a hollow sound with a musical intonation, and the third a prolonged whistling. These different sounds usually exist at the same time in different arteries of the body, more especially the larger arteries, as the carotids and femoral. They occur almost exclusively in one class of patients; those affected with anemia, whether the anemia depend upon disease of the heart or not. The largest number of patients presenting this phenomena, are to be found amongst chlorotic women.

One of the most curious results to which the author has attained, is the identity of the placentary sound heard during pregnancy, with the bellows murmur of the arteries. We think he has fully corroborated this assertion, which was verified at Paris by the dissection of a woman dead of an operation made for the removal of a supposed extra-uterine pregnancy. It was then found that the tumour was in reality a cancerous mass, although there was a distinct sound during life, similar to that produced by the impregnated uterus. The pressure of the uterus upon the arteries of the pelvis, would then seem to be the chief cause of the sound commonly, but incorrectly, referred to the placenta.

The remarks of Mr. Bouillaud relative to the general causes of the primary diseases of the heart, are well worthy of careful perusal. His correct habits of observation and long experience of these diseases, with the accurate researches he has made into their predisposing and exciting causes, give unusual value to this part of the subject.

The knowledge of the diseases of the heart, as of every other organ, is based upon the anatomical characters left after death, and the physiological alterations or symptoms observed during life. The anatomical characters indicate the remains or traces of the disease, rather than the disease itself. The physiological signs are in part owing to the original disease, and in part to the secondary changes of structure, induced by it. An example will render this more clear. If we examine the heart of a patient who has long laboured under disease of

this organ, we will very often find the muscular tissue of it hypertrophied, and the valves thickened and indurated. During life, certain changes in the natural action of the heart indicated the different stages of the disease, both of the valves and the muscular fibre. But all these organic changes arose from an acute inflammation, dependent on rheumatism as its exciting cause. A great excellence of Dr. Bouillaud's work is, the extreme care with which he has sought and has pointed out these different changes in the diseased action, connected, perhaps, at first, with rheumatism, which was thus the original point of departure, for the whole train of organic lesions witnessed on the inspection of the body after death.

During life, the art of diagnosis consists in ascertaining the organic lesions by a careful examination of the physical signs, and an accurate investigation into the general symptoms. Without the concurrence of both these means of explanation, the diagnosis would not reach the greatest attainable certainty. The absolute necessity of both kinds of research is familiar to most physicians, but even with this aid they are obliged to feel that the most minute inquiry into all the symptoms will sometimes fail to afford them the necessary precision in diagnosis. The physical means of examining the diseases of the heart, consist in the auscultation and percussion, and afterwards the inspection of the exterior of the chest, by the sight and the touch. The signs derived from these sources will teach us very nearly the physical state of the heart. The general or physiological signs are the fever, and the consequent derangement of the different organs, caused by acute cardiac diseases; we may add, the serous effusions into the various cavities of the body, and into the cellular tissue which usually follow chronic lesions of the valves. In the same series may also be included the passive hæmorrhages and congestions of blood, from which many of the viscera suffer in the latter stages of cardiac disease.

The information derived from these various means of examination, is even more essential to the diagnosis of diseases of the heart, than those of many other organs.

The *causes* of diseases of the heart are, in some respects, common to it and the other viscera, and in others they are peculiar. Thus, a blow which bruises the walls of the thorax opposite to the heart, or the sudden impression of cold upon the skin, may give rise to carditis or to pericarditis without the intervention of any previous disease. Other causes are more limited in their action to the heart itself; they are such as either stimulate this viscus directly, or produce diseases of other parts, which re-act upon the central organ of the circulation; for, from the very nature of its functions, it is necessarily exposed to influences of this kind.

Amongst the causes which excite the heart most directly, are the emotions of the mind. Corvisart regarded them as the most powerful of all causes. But although their influence is undoubtedly great, it seems to Mr. Bouillaud, and our own observation confirms his

opinion, that they give rise to nervous or strictly functional diseases of the heart, far more frequently than to organic lesions. It is true that these latter are sometimes the terminating point of many long continued functional derangements. So that to a certain extent, the influence of the passions, in producing chronic disease of the heart, may be readily admitted.

There is one disease which very frequently co-exists with acute inflammations of the internal or external membrane of the heart, and at other times precedes it; this is rheumatism. The precise relation of it to both endocarditis and pericarditis will be afterwards pointed out, but at present it is proper to note the frequency and the importance of this connexion. Whatever may be the lesion of the heart, which is produced by these different causes, it rarely remains as an uncomplicated affection. The peculiar characteristic of all the diseases of this organ is, that one tissue after another is attacked, and finally the whole train of symptoms are developed, which form the closing scene of cardiac diseases. In a majority of cases, several different lesions of the heart occur simultaneously, and finally form but one disease. And if we cannot completely remove the affection, it will again reappear under some new, and generally more complicated form.

The influence of hereditary predisposition is not less strong in facilitating the production of diseases of the heart, than of those of the lungs or brain. Families are frequently subject to these diseases for several successive generations, and are destroyed by them as soon as the middle period of life is attained.

In the classification of the diseases of the heart, the author follows the grand divisions universally adopted, of organic and functional disorders. But in his subdivision of the organic lesions, he differs considerably from many pathologists, from the extent of influence ascribed by him to inflammation, which he considers the origin of most diseases of the valves, and secondarily of the muscular fibre. This opinion will be afterwards considered, when speaking of the chapter relative to endocarditis.

The duration of cardiac affections is so various, that no precise limits can be assigned to them. Dr. Louis found that six years was the average duration of cases of hypertrophy and diseased valves. But these cases relate to patients in hospitals, whose complaints had in most cases been aggravated by the want of medical attention, and an improper course of life. In private practice, where all the aid necessary to check the progress of disease can be procured, the duration of those of the heart may be protracted to an almost indefinite length. Indeed they need not necessarily abridge the average duration of life, if a persevering care be exercised by both patient and physician. Their progress is not necessarily continuous; the symptoms of the disease may be much mitigated, but unless they depend upon strictly nervous or functional disorder, though they may be arrested for a time, they return again with new force when the temporary abatement in the symptoms ceases. The practitioner should never lose sight of this

fact, and should be on his guard against temporary intermissions, however useful they may be in the treatment of cardiac diseases from giving a short repose to the patient, and enabling the physician to interpose his aid with more effect.

As the diseases of the heart are generally complex, they may offer two elements; one the organic lesion, which cannot always be eradicated, the other the mere nervous or functional disorder, which may be checked completely and sometimes finally removed, without interfering with the progress of the organic disease. By attention to this distinction we have done much good; we have often modified the treatment in such a way as to remove the functional disorder which aggravated the organic disease of the heart, and was the most fruitful source of the painful symptoms experienced by the patient. In some instances, this functional disorder depended upon irritation of the spinal nerves, and was quickly relieved by applications to the dorsal and cervical vertebræ; in other cases, an over excited hysterical temperament was the exciting cause; in a third class, derangement of the digestive function, excess of venereal indulgence, or other obvious abuses of living were easily recognised as the origin of the accidental disturbance.

In his treatment of diseases of the heart, especially the acute inflammations of its internal and external membrane, or of its tissue, the author follows a vigorous and long continued depletory practice. We agree with him that this is the most safe and prudent course. But in chronic affections, we are convinced that the depletory and rigid antiphlogistic practice has been much abused. In very old hypertrophy, especially when combined with dilatation, as is most frequently the case, excessive blood letting, rigid diet, and the long continued use of digitalis, debilitate the patient, impede the action of the heart, and hasten that change in the elements of the blood which accompanies the dropsy of the last stages of disease of the heart. We have been witnesses of these different errors; we have seen patients enter public institutions, who had not been treated in a sufficiently active manner at the origin of the disease; but we have still more frequently witnessed cases of the greatest exhaustion and extreme anasarca, in which debilitating remedies were used, when neither the physical state of the heart, nor the enfeebled constitution of the individual called for such a course. In France, physicians are in the habit of taking blood much less copiously than in America; hence there is more room for Dr. Bouillaud's remarks, as to the feebleness of ordinary practice, than there is with us, where the most frequent error with young physicians is to bleed largely when the blood is beginning to lose its red globules, and to protract the antiphlogistic treatment too long. Such erroneous practice is especially to be avoided when the nervous diseases of the heart complicate its organic affections.

Our own views as to the best treatment of diseases of the heart in general, are as nearly settled as the present state of the science upon that subject will permit. We bleed freely, and even frequently at the beginning of a pericarditis or endocarditis, following up the bleeding

by cups. Blisters are useful, but on less unquestionable grounds. When the active stage of inflammation is passed, or even during its progress, conjointly with the other remedies, tartarized antimony, colchicum or digitalis may be given with great advantage. But when the disease of the heart is of a more chronic character, blood-letting should not be so frequently repeated, and should be barely sufficient in quantity to diminish the inordinate action of the heart, without materially encroaching upon the strength of the patient. We should enjoin perfect quietude of mind and abstinence from fatiguing exertion, such as going up hill, or ascending a staircase; but moderate exercise in a carriage is of undoubted advantage. The diet should consist of mild, but still sufficiently nutritious articles. The medical treatment which from time to time may be called for, in addition to these hygienic means, must be left to the skill and discretion of the practitioner.

A complicated case of slight hypertrophy of the heart, with much functional disorder, is often met with in young persons of a nervous temperament. This variety is most frequent a few years after puberty, and is usually removed by the physical and moral effects of marriage. We have met some remarkable examples of the entire removal of these symptoms soon after marriage, although the patients had been annoyed by them for some years.

The subject of pericarditis is one to which Dr. Bouillaud has given much attention. He has illustrated the nature of the disease by a long series of observations. Until very recently, indeed until the publication of an excellent memoir by Dr. Louis, about ten years since, the diagnosis of pericarditis was enveloped in the greatest obscurity. It was thought to be a disease almost necessarily mortal, because the descriptions left of it by some of the older writers had been drawn from cases of extreme severity, which rapidly terminated in death. An example of this variety was presented by the celebrated Mirabeau, who expired after an illness of a few days in the most horrible torments. These cases are, however, exceptions: in a majority of patients, pericarditis is not attended with so frightful a train of symptoms. Frequently the disease is completely latent, and escapes the most minute examination. The first approach towards definite views of the diagnosis of pericarditis was derived from the memoir of Dr. Louis; he proved by examining records of cases, and confirming these records by his own observations, that one subject of every twenty-three dead of various diseases, presented adhesions between the two surfaces of the pericardium; in other words, offered direct proof that they had been affected with pericarditis, but had recovered from the disease. He then examined with care some patients who had presented the ordinary signs of pericarditis, and found that the region of the heart offered a decided prominence, and yielded a dull sound on percussion in the same place. The respiration was feeble, and the impulsion of the heart diminished. These physical signs were peculiar to those cases in which there was a considerable effusion of serum and lymph; but it is obvious that neither distension

of the thorax nor dull sound on percussion, could exist where the pericarditis was *dry*, that is, when there had been a secretion of lymph, but no liquid. Accordingly, other signs were sought, and it was found that in some of these cases there was heard, on auscultation, a creaking sound like that produced by bending a piece of dry leather or parchment, and that at the same time there was usually a slight modification of the natural sounds of the heart, and perhaps a little dulness on percussion. So that really very few cases of pericarditis occurred, in which some physical signs of the disease could not be found, and in a great proportion of cases there were besides some of the symptoms once looked upon as the only ones which were characteristic of the affection. The disease is therefore susceptible of diagnosis in the large majority of patients, although there are some in whom it is completely latent, and in whom no evident physical signs, nor even any rational symptoms can be detected. These are usually very slight and simple cases of the disease, which are not severe enough to give rise to any febrile movement, nor to the large liquid effusion which constitutes the most important physical sign of inflammation of the pericardium.

Another class of cases which offer much difficulty, are those in which pericarditis is complicated with pleurisy of the left side. In these cases the diagnosis is difficult, from the seat of the pain, and the gradual blending of the dulness of sound caused by the effusion into the pleura, with that of the pericardium, which is so closely united to it. It is not always possible to draw the line of distinction in these cases. If error should be committed, it is not often of much consequence, as the treatment differs but slightly between severe simple pleurisy, and the same disease complicated with pericarditis. Other complications of the disease do not necessarily increase the difficulty of the diagnosis, as the physical signs of pericarditis are strictly local, and so distinct from all other lesions, that there is rarely even a possibility of confounding it with other affections of the chest.

A very common complication, first clearly pointed out by Dr. Bouillaud, is that of endocarditis or inflammation of the internal membrane of the heart, which occurs in a very considerable proportion of cases, and seems to be the chief cause of the bellows sound so often met with in pericarditis. This complication is especially frequent in those instances of pericarditis which arise from acute rheumatism, which is the exciting cause of about one-half of the whole number of cases. Indeed most severe cases of the disease are attended with this inflammation of the internal membrane. The same rule extends to the inflammation of the pericardium, arising from external causes, the immediate influence of which is confined to this serous membrane, as was well shown in a number of experiments upon rabbits prepared by M. Desclaux, a pupil of Dr. Bouillaud. We cannot speak from our own recollection in this matter, as we do not know that we had always examined cases of pericarditis with so much care as to be sure

that the internal membrane of the heart was perfectly free from disease.

The causes of pericarditis have become better known in proportion as the diagnosis of the disease has been rendered more precise. These causes, in addition to blows upon the chest, and exposure to cold and wet, which sometimes affects the pericardium as directly as at other times it gives rise to inflammation of the pleura, are often to be sought for in the rheumatic diathesis. We use this term purposely, because some obscurity still rests upon this subject. It is perfectly well established that an attack of acute rheumatism will give rise to the disease in two different ways. In one case there is a real metastasis, the inflammation ceasing in the joint before it attacks the pericardium; just as one joint recovers its suppleness and becomes free from pain, when another is attacked by the rheumatic inflammation. The second variety is perhaps still more common, that is, when the pericardium is inflamed simultaneously with the joints, and the pain in them is not in the least relieved by the disease of a more important organ. In either case a knowledge of the frequency of the complication renders it an ordinary practice at the Philadelphia hospital, to explore the region of the heart with care in every patient affected with acute rheumatism.

The author alludes to chronic pericarditis in a cursory manner. We have seen cases of this variety, most of them succeeded to acute pericarditis, but in one instance the disease, which was recognised during life, began as a chronic affection from the first. This patient died, and on examination after death, it was found that the pericardium was studded with small tubercular granulations, showing that the disease was very analogous to chronic peritonitis, which is always complicated with tubercles except when it succeeds to an acute inflammation.

Dr. Louis remarked that a large majority of cases of pericarditis recover; the same happy result is confirmed by the practice of Dr. Bouillaud, who has usually treated the disease with success. In their practice they both agree that the antiphlogistic treatment is the only one adapted to the nature of the complaint, but Dr. Bouillaud follows a more energetic practice than is common with the French physicians, although it is one which would meet the views of American practitioners. He bleeds both generally and locally with great boldness, and repeats the bleeding several times in the hope of cutting short the inflammatory action. The effect of the blood-letting is kept up by the use of blisters and various debilitating remedies, as tartar emetic or digitalis. Our own views on the propriety of this course accord with those which the author has expressed; if the pericarditis be severe, we cannot be too energetic in our practice, but copious and quickly repeated blood-letting is necessary. It is, however, very true that simple mild cases of pericarditis are easily cured by a more simple and a milder treatment, so that a severe course then becomes unnecessary and even inexpedient. Important as active treatment is in the management of so violent a disease as severe pericarditis, it should

not be resorted to without due discrimination as to the nature of the case.

These remarks, relative to pericarditis, may surprise some of our readers who are neither aware of the extreme frequency nor of the comparatively small mortality of the disease. They are nevertheless based upon accurate calculation, and are confirmed by the experience of several different observers. Another fact, quite as startling, is that a large proportion of patients who suffer from acute articular rheumatism, are at the same time affected with pericarditis. Dr. Bouillaud computes the average proportion at one-half the whole number of cases of acute rheumatism. This computation is rather high, unless endocarditis be included; if this addition be made, from our own observation, we should then think it quite correct to say that one-half the persons who are ill with acute rheumatism, suffer from an inflammatory disease of the external or the internal membrane of the heart, or else of its muscular fibre. It has long been known that rheumatic patients frequently suffered from disease of the heart, but it was not ascertained until recently how frequent the complication was, nor what was its precise nature.

The after consequences of the adhesions of the pericardium does not seem to our author to be great. We must all have seen numerous cases of very old adhesions of the pericardium, which were not detected until after the death of the patient, from another disease. But, on the other hand, we have occasionally met with a case in which there was permanent derangement of the health, apparently from these adhesions; although as the other parts of the heart were probably not entirely free from disease, the symptoms may have arisen from this source.

There is an inflammation of the heart which has attracted the especial attention of our author; it is endocarditis, or inflammation of the internal membrane of the heart. Some years since, before the publication of the joint work of Bertin and Bouillaud, the internal membrane of the heart was observed to offer, in many subjects, an unusually red tinge of various degrees of brightness. By some, the redness was exclusively referred to the imbibition of the blood which remained in the heart after death, and there is no doubt that in the large majority of cases in which the heart and arteries presented this redness, such was the fact. This has been proved, by filling a portion of an artery previously pale, with blood, and allowing it to remain until decomposition had begun, when the internal coat has been found to have become of a dark red colour. In other cases there is a very striking coincidence between the redness of the internal membrane and the state of the blood. When the blood is unusually liquid, as is the case in certain malignant fevers, it percolates easily through the tissues and stains them of a dull red colour. If in these subjects the natural progress of decomposition be hastened by heat, the redness is produced more rapidly. Thus, in direct proportion with the elevation of temperature, the rapid decomposition of bodies,

and the fluidity of the blood, were cases of redness of the lining membrane of the heart and large arteries found.

After excepting these instances of redness of the internal coat, depending upon the progress of decomposition or the unusual fluidity of the blood, there will remain a large number of subjects who present a greater redness of the lining membrane of the heart than is found in perfectly healthy individuals. This alteration of colour is then sometimes pathological, and arises from inflammation of the internal coat of the vessels or heart, a disease not without analogy in its causes and some of its symptoms to pericarditis. Most frequently the redness is combined with other and less doubtful evidence of inflammation, such as thickening or deposit of lymph, but it is clear that neither thickening nor the morbid secretions of the membrane could ever reach an extreme degree without either causing the death of the patient, or being swept away by the continual motion of the heart and the rapid passage of the blood. From its anatomical structure we ought not then to expect the same obvious and well marked signs of inflammation of the endocardium as we would of the external membrane of the heart. The most important seat of inflammation of the internal coat, is the valves of the heart, where it is the most intense, and from the thickening or the deposit of lymph upon the valves, may give rise to their chronic alteration; their lesions afterwards react upon the substance of the heart and produces the usual series of symptoms met with in chronic disease of this organ. A knowledge of the symptoms of inflammation of the endocardium is therefore important, whether the disease be severe enough to destroy life at the moment, or it be so moderate that no present danger be feared, though the most serious organic disease may afterwards result from it.

The causes of endocarditis are nearly the same as those of inflammation of the heart. A majority of the cases arise from acute rheumatism, which sometimes will give rise to pericarditis, at other times to endocarditis, and in severe cases to both these affections. Exposure to cold and wet may also have its influence, but next to inflammatory rheumatism, the most important cause is certainly an altered state of the blood. This alteration of the blood occurs in phlebitis, and occasionally during hæmorrhage. We have seen the valves of the heart of a bright red colour, and covered with deposites of lymph, differing only in their softer consistence from the vegetations met with in chronic disease of the valves, in subjects dead of traumatic phlebitis and of hæmoptysis. The other causes of endocarditis are unknown; the first unquestionable case we observed, was that of a young physician attached to one of the Parisian hospitals; in him the disease began and ran its course to a fatal termination, without any assignable cause.

But though the origin of endocarditis is often obscure, the diagnosis of the disease is not a matter generally of much difficulty. If the primitive symptoms are often doubtful, there are nearly always some signs of an acute inflammation of the heart, which either attacks the external or the internal membrane, or else its muscular substance. As the

signs of pericarditis are usually connected with physical changes, which render the disease of much more easy diagnosis than the inflammation of the internal membrane, we may then exclude this disease, and refer the doubtful cases to carditis or to endocarditis; and as the former affection is comparatively rare, the probabilities are much in favor of the latter disease. The author is extremely accurate in his description of the most frequent symptoms of acute inflammations of the heart. They are a feeling of uneasiness at the precordial region, palpitations, irregular or quick and jerking action of the pulse, increased impulse of the heart, and very often a bellows sound during the systole. The percussion is not usually much altered, but the dulness may be rather greater and more extensive than is natural, from the distension of the heart by large coagula, an accident frequently complicating endocarditis. The fever is at times intense, and much greater than in ordinary inflammations. Other general symptoms are less constant, but when they occur, add great certainty to the diagnosis. The most important are œdema of the face and ankles, and oppression of breathing, sometimes amounting to the most intense dyspnœa.

The treatment indicated by our author as appropriate to endocarditis, is a very active one, and consists in copious general and local blood-letting; blisters on the region of the heart, and the usual debilitating remedies, employed in conjunction with blood-letting. After the acute stage is passed, it is often necessary to direct our practice, with a view to subdue the subacute inflammatory action which may terminate in thickening or vegetation of the valves.

The connexion between endocarditis and chronic disease of the valves is well established. It is certain that a considerable number of patients who are taken with acute inflammation of the heart, are afterwards affected with a lesion of the valves. Our author refers to this cause all the lesions of the valves, scarcely excluding the ossifications which are so constantly observed in the bodies of aged people. He may have erred in these general conclusions; it is even more than probable that he has committed an error in assuming facts which are not yet demonstrated, and in regarding lesions which are the mere result of the natural change in the economy produced by the progress of age, as originating from inflammatory action. The word inflammation is used by him, and by other writers of the physiological school, as nearly synonymous with disease, and not as limited to a single form of morbid action.

In a practical view, the following statement will contain nearly the actual state of our knowledge of the causes and mode of production of the lesions of the valves of the heart.

1. Certain diseases of the valves, indicated by increased thickness of their fibrous coat, or by vegetations attached to the lining membrane of the heart covering the valves, are evidently the product of inflammatory action. This inflammation is sometimes indicated by well marked symptoms, at other times it is nearly, if not quite latent, and assumes a subacute form. When the symptoms are present, they are, as already mentioned, oppression, and a sense of uneasiness

in the region of the heart; sometimes, but rarely, acute pain, often œdema of the limbs, a quick inflammatory or feeble intermittent pulse, alteration in the impulse of the heart, which is at first increased, but afterwards diminished in force, and bellows sound during its systole. The countenance is livid and flushed if the disease be sufficiently extensive to interfere very materially with the circulation of the blood, by interrupting or impeding the play of the valves of the heart. If the impediment to the circulation increase, the blood is retained in the heart, forms a coagulum, and the patient dies of suffocation. Not a few patients who die with symptoms of dyspnœa, followed by the deposit of large coagula in the heart, really perish from inflammation of the lining membrane of the valves, which is followed by the stagnation of the blood.

2. Another class of cases of disease of the valves of the heart does not depend upon inflammation. It is the affection which occurs in old persons, from physiological changes of the fibrous tissues, these tissues being gradually converted into a bony substance. But the calcareous degeneration of the valves does not often exercise an important influence upon the health of the patient, or even upon the action of the heart, which does not so often become affected with hypertrophy, or dilatation, as in younger persons.

The signs of diseases of the valves of the heart are now so well known that it is useless to trespass upon the time of our readers in describing them; Mr. Bouillaud has given numerous observations of the various lesions of the valves with details sufficiently minute to offer the necessary guaranty of truth.

Hypertrophy of the heart is a disease already well described in the work of Bertin and Bouillaud; the former author was the first to establish the distinctive characters of the various kinds of hypertrophy. In the same work, the connexion between disease of the valves and hypertrophy was indicated. This connexion is still more closely insisted upon by Dr. Bouillaud in the present work, and the experience of those who have largely cultivated pathological anatomy is in direct confirmation of his views. A majority of cases of hypertrophy are certainly dependent upon disease of the internal or external membrane of the heart, and more especially of the valves. There are, however, a few cases in which the muscular fibre is first affected, and the valves are not diseased until their continued and excessive distention in consequence of the inordinate action of the heart gives rise to thickening. But the diseases of the muscular substance of the heart and of the valves, constantly tend to run one into the other; one is rarely to be found without the other soon following.

The author has given but a very short chapter to a very important subject—that of nervous palpitations of the heart, which are not accompanied by any appreciable lesions. This variety of nervous disease is so frequent amongst young people, that physicians are constantly consulted upon the subject. Amongst our own patients, the proportion of those affected with nervous palpitations of the heart is surprisingly large. These palpitations are almost always observed

in persons of a nervous temperament, but they may arise from numerous exciting causes. Thus, a change of life, from an active one in the country to a sedentary studious employment in a large town, more especially a course of medical studies, disposes very much to nervous palpitations. They are extremely frequent amongst the medical students at Philadelphia, and it is said those at Edinburg. At Paris we have not observed them so frequently in the same class of young men. Depressing passions tend strongly to produce the same effect. The abuse of tobacco, of coffee, of spirituous drinks, of venereal pleasures, and especially onanism, are also very powerful causes. Another cause which is less frequent, but quite as effectual as those first mentioned, is the involuntary emission of semen arising from chronic gonorrhœa or other diseases, and described by Professor Lallemand. Anemia and chlorosis are also very frequent causes of nervous palpitations; especially when they occur in young women, in whom there is any derangement of the menstrual function. A variety of palpitations, mentioned by the writer, is one which he designates under the name of rheumatic, or irregular palpitations, not arising from any assignable cause, suddenly returning, and then ceasing again. And lastly, we may add, as one of the most frequent causes, the affection known under the name of spinal irritation, which is most easily cured by repeated external applications to the spine.

All these different kinds of nervous palpitations, are in general more effectually treated by a mild tonic treatment, than by bloodletting or other debilitating remedies, which prove most effectual in obviating the symptoms of organic disease of the heart.

This short analysis of the work will scarcely convey to the reader a distinct idea of the numerous facts presented by the writer. It is unfortunate that the exceeding diffuseness of the style should prove rather a serious obstacle to the general appreciation of the book; yet those who will not be startled at a little superfluous matter, and at not a few superfluous words, will be abundantly repaid for their labour. In conclusion, we cannot do better than allow the author himself to give an account of the chief additions he has made to our knowledge of the diseases of the heart.

"1. I have added greatly to the knowledge of the diseases already studied by my predecessors, and I have endeavoured to clear up, by the light of analysis, those complicated affections vaguely indicated under the name of aneurism, organic lesion or affection of the heart. I have, for example, clearly demonstrated that the series of phenomena, which, from the time of Corvisart have been referred, even by the best educated observers, to hypertrophy or aneurism of the heart, are commonly nothing else than the effect of certain lesions of the valves of that organ, and that the hypertrophy and aneurism are in reality but one of the consequences of those lesions.

"2. If I am not mistaken, I have thrown new light upon the acute inflammation of the external membrane of the heart. I will even venture to assert, that in respect to its causes, signs, progress and various terminations, acute pericarditis will henceforward be a disease nearly as well known as pleurisy. With respect to the causes of pericarditis, I shall mention a fact equally curious and important, which is, that this disease exists in about one-half of the patients who are affected with violent acute articular rheumatism. Pericarditis is thus, as it were, one of the elements of the disease termed acute articular rheumatism, and if we

consider this disease in a more enlarged point of view, as was formerly done, we would extend the term to inflammation of all the sero-fibrous tissues in general. Since the pericardium is a sero-fibrous tissue, like those commonly affected by acute rheumatism, it is not surprising that its inflammation should so often coincide with that of the joints. In other words, that rheumatism of the pericardium should occur under the same circumstances as those which give rise to rheumatism of the articular synovial membranes and of the fibrous tissues which are lined by them.

"As to the treatment of pericarditis, my labours will, I hope, in some degree, prove that blood-letting, when practised in a more energetic manner than is usual,* gives a successful result which is truly extraordinary. Such is even the efficacy of blood-letting, when sufficiently copious and repeated at short intervals, that recovery has become the general rule, and death only the exception; the reverse of what Corvisart stated as his experience. The eleven observations detailed in the work, and treated according to the precepts which I have laid down for the treatment of pericarditis, will scarcely leave a doubt as to the exactness of what I have stated; a fortunate medical discovery, which is every day confirmed by new facts!

"3. There is another acute disease of the heart, of which I may be said to have given the first description. Before my labours, it was so completely unknown as not even to have received a name. I allude to the acute inflammation of the sero-fibrous tissue lining the interior of the heart. The complete examination of this affection is certainly one of the most original parts of the work. I wished to call the attention of readers in a particular manner to the study of this disease. I have shown that this inflammation plays a most important part in the disease of the heart, not because it is far more common in the acute stage than was generally believed, but because it is often prolonged and passes into the chronic stage, when it gives rise to grave lesions of the valves of the heart, and of the muscular tissue of the heart beneath its lining membrane. It is thus more or less directly connected with the study of the various diseases commonly known under the term organic lesions of the heart. To this lining membrane I have given the name of endo-cardium, and to its inflammations that of endo-carditis.

"Amongst the most important causes of this inflammation, as well as of pericarditis, is the rheumatic disease, or, in other words, the cause from the influence of which acute rheumatism originates. This cause acts abruptly, and arises from sudden changes of temperature, assisted by a peculiar predisposition. In the cases in which endo-carditis complicates an acute articular rheumatism, it is more easily overlooked than pericarditis, and sometimes gives rise to important lesions of the valves and to those *gouty* asthmas, whose origin and nature have been hitherto so obscure. This book will not be completely useless if it furnishes the means of preventing such an unfortunate termination of a considerable number of cases." W. W. G.

* The author should have said in France. The method of large and repeated blood-letting has long been the most common practice in acute inflammations, both amongst the physicians of England and of this country.

BIBLIOGRAPHICAL NOTICES.

XIV. *Transactions of the Medical and Physical Society of Calcutta, Volume the Seventh*, 8vo. *pp.* 497. *Calcutta*, 1835.

The present volume of Calcutta Transactions contains thirty papers, independent of those in the appendix. All of these papers are highly interesting, and the majority of them present a record of important facts, as well pathological as therapeutical, especially in reference to the endemic diseases of India.

The *first* article is Observations on the Congenital Goitre in Animals which occurs in Nipal. By A. Campble, M. D.

It appears that goats and sheep, brought from the north-western provinces of India, where goitre is unknown, to Nipal and Tirhoot, where it is very common, produce goitred young, even when pregnant previous to their arrival; while animals, although unaffected and otherwise in perfect health, produce in Nipal goitred offspring. A female having the disease scarcely ever produces other than diseased young.

Of twenty-three lambs and kids born with bronchocele, under the observations of Dr. C., all died within a few minutes after birth, with one exception, a lamb, namely, having one gland only enlarged. The tumours in the offspring of goitred parents, are invariably larger than in those of healthy animals. The death of the goitred young does not depend upon the size of the tumour.

In all the cases above alluded to, the young were born alive, and at the termination of the usual period of gestation, and with the exception only of the individual that lived and one other, the coat of hair or wool was entirely wanting, save a line running along the spine, and a circular portion on the fore knees (carpi).

"To meet any objections that may be made to this curious fact, on the ground of probable mistakes made in calculating or ascertaining the exact period of impregnation, I beg to state, (observes Dr. C.) that in two instances, a goat produced twins; one of the young ones, in each instance, was completely clothed in hair, had not a goitre, and he lived; the other, born with him, was destitute of hair, was alive when produced, but expired immediately afterwards."

The only survivor of twenty-three individuals born with the disease, was the offspring of a sheep not affected with goitre; its tumour was of one gland only, and about the size of an apricot. The goitre remained stationary in size for about ten days, from which time, until it was six weeks old, Dr. C. did not examine it. At the latter period he was surprised to find the disease had vanished.

Congenital goitre is not known in Nipal to occur in the human subject. Dr. C. has been unable from dissection to ascertain the causes producing death so invariably after birth in animals affected with the disease; they in all probability depend upon a faulty condition of the respiratory passages. This much is certain, that the muscles arising from the sternum, to be inserted into the os hyoides and thyroid cartilage, are, by the pressure of the tumours, nearly obliterated. Besides this, the pressure of the tumours on the larynx may be well supposed to prevent the full and natural developement of that 'door of life;' and Dr. C. has observed in all the cases, that the thyroid cartilage is much less hard and firm than the cartilages of the trachea. "The vulgar say 'the creatures die because they cannot suck,' possibly they could not, but they are very rarely

allowed to try; usually the animal when born is feeble, and unable to raise its head, it gasps half a dozen times for breath, and then expires."

The *second* article contains Some Account of a Peculiar Form of Fever which exists in Bengal, by H. H. Goodeve, M. D.

This form of fever prevails in almost every part of Lower Bengal, but Dr. G. believes it to be unknown in the western provinces, unless perhaps in some very marshy districts. Its principal seat is in the neighbourhood of Midnapore, and in the flat tract of country stretching thence towards the sea, in the direction of Hidgelu, Cuttack and Balasore. It attacks principally the lower classes, and those who are much exposed to hardship, without distinction of sex or age.

"The fever begins with the usual symptoms of languor, head-ache, &c., and is succeeded by a fit of shivering more or less severe, though the symptom is not always very strongly marked, and the hot fit sometimes comes on without its usual predecessor. This latter stage is often very severe; the heat of the skin is great, and the pulse very quick and full, with severe head-ache, often accompanied by low delirium, and at times a semi-comatose condition, in which the patient passes his urine and fæces involuntarily. In other cases, it is much milder. This hot stage continues with more or less severity for about eight and forty hours, when it gradually abates, and in the course of a few hours more the patient is as well as he was before the attack, and able to go about his usual occupation. A critical sweat sometimes occurs, but it does not always terminate the paroxysm. A peculiar local affection, however, accompanies this disease, which is, Dr. G. believes, invariably present, forming one of its distinctive characters. This is an œdematous swelling, usually of the feet and ankles, with pain, and a burning sensation, and sometimes considerable inflammation, which commences with the first appearance of the fever, and subsides at the termination of the paroxysm, entirely, in the early periods of the diseases, but after the malady has become thoroughly established in the patient's constitution, the *swelling* remains permanently fixed, the pain and inflammation only returning with each attack. The legs are not, however, always the seat of this affection, in some instances, it prefers the hands and arms, and in others, the thighs, and not unfrequently the scrotum; in the latter case, Dr. G. has often seen a sarcomatous enlargement of the testicle present at the same time, but whether this latter was produced by the former disease, or whether it existed previously, and by its irritation determined the affection towards this part, he cannot say.

"In the early attack of the disorder œdema is not always present: sometimes there is merely a hard inflammatory swelling in the inside of the thigh, or on the arms, and in a few cases, only extreme pain in their situation without inflammation.

"The first paroxysm being over, the patient remains free from another attack for *fourteen* days, at the expiration of which, the disease returns in the same form, and continues, if unopposed by medical treatment, to repeat its visits twice in every month for many years; not unfrequently during the remainder of the patient's life, and that without materially injuring the vital power. Dr. G. has often seen men who have been labouring under this disease for ten and fifteen years, who, in the intervals of the fever, were in perfect health, and working as hard as their neighbours. It is sometimes, however, though very rarely, fatal; and when it does terminate in death, it is commonly by effusion on the brain."

Dr. G. conceives the accessions of this fever to be evidently influenced by the changes of the moon; the periods of the new and full moon, being those at which the paroxysms recur, and with the utmost regularity.

The native mode of treating this disease is by blood-letting at the very commencement of the attack. In almost all cases they administer a mild purge, and sometimes an emetic. After the bowels are cleared out, they trust, during the remainder of the attacks, to starvation, and tisans of tamarind water. If there be much pain and inflammation in the local affections, leeches and cold

lotions are applied. In the intervals of the paroxysms, febrifuge medicines are given, and amongst others, their favourite *arsenic* is the most celebrated.

"This plan of cure (remarks Dr. G.) is so excellent, that in treating the disease, we may safely take it for our guide, modifying it slightly, however, to make way for the improvements of modern medicine."

The *third* paper is an account of a Case of Abscess in the Coats of the Bladder, by J. Davidson, Esq.

"Hussain Ali, a stout middle aged man, addicted to the use of opium, but otherwise of regular habits, applied for relief at the Pilgrim hospital on the 20th November, 1832, on account of retention of urine, which he stated to have come on gradually, but that no urine had been expelled for two days. He was in great pain from the distended bladder, which was felt above the pubis, very large and hard, and there was an œdematous swelling of the penis and scrotum. Finding some difficulty in introducing the common catheter, Mr. D. used a straight pewter one, and easily succeeded in drawing off a very large quantity of very fœtid urine. Ordered a purgative, and hot fomentations to the perineum and pubis, and a composing draught at bed time. In the morning he was much relieved, and for several days continued to pass his urine pretty copiously, but with gradually increasing pain and difficulty; this seemed attributable to a swelling just above the pubis, which, notwithstanding the application repeatedly of leeches, and cold applications, continued to increase in size fourteen days, at which time it was as large as a goose egg, hard and puffy; the swelling had extended to the penis, and the urethra appeared obstructed by it, so that he could not pass his urine for several hours. He was in great pain and very irritable with fever, and complained that unless he were relieved from his sufferings he could not live through the night. Mr. D. found the swelling still hard, but thinking there was an obscure sense of fluctuation at the most depending part, he made an incision of a couple of inches in length, and one and a half in depth, which gave immediate relief, and was followed by the discharge of about eight ounces of fœtid pus and sloughs. In about an hour he was able to expel his urine by the urethra, but during the ensuing night, discovered that it was also discharged by the wound above the pubis. This discharge of sloughs and urine, mixed with pus, continued for upwards of a month; during the early part of which time, he suffered from fever and bowel complaint, but these were soon cured by the usual remedies; after which, by the use of vegetable tonics and soda, and opium at nights, with generous diet and brandy, the abscess put on a healthy appearance, the sloughs gradually ceased to be discharged, and on the 10th of December he was dismissed, the abscess being quite healed up, and his health good in every respect, which it has continued to be up to this time, January 9th, 1833."

The *fourth* article is on the Pathology of some of the Diseases of the Abdominal Viscera, by C. Morehead, M. D.

This paper comprises a number of interesting cases of abdominal diseases with pathological remarks. Its character is such, however, as to prevent the several points to which the remarks of Dr. Morehead have particular reference, from being presented in a satisfactory manner, unless the cases to which they are appended be given in extenso, and this our limits will not permit.

The subsequent article is a detail of Cases of Chronic Dysentery treated with Sulphate of Copper and Opium, by W. W. Raleigh, Esq.

Mr. Raleigh has endeavoured to collect some distinguishing signs whereby to decide on the time and state of the disease at which we may expect advantage from using the sulphate of copper and opium; and although he is not prepared to offer any positive rule for the guidance of the practitioner, he thinks that he has found this combination most beneficial in cases where the evacuations were of a pultaceous or pulpy consistency, as if in a state of fermentation, and where they were fluid and of a pale colour. In those instances in which a mahogany or beet coloured tongue has been a remarkable symptom, he has invariably found it to be of great service; as also where the tongue has been unnaturally deficient in colour and soft in texture. Tenderness and soreness in the

course of the colon, if not acute, as where the disease has been of long standing, constitute no objection to the administration of the remedy; but where these symptoms are accompanied by evacuations of a bloody mucous description, which are the positive indications of high inflammatory action, Mr. R. presumes, that in India, at least, it would be hazardous to pursue any other than an anti-phlogistic course of treatment.

In cases subjected to the treatment by sulphate of copper and opium, there is, we are told, after a time, a disposition to indolence on the part of the intestines, and deficiency of the natural secretions of the bowels; the fæces become of rather a clayey consistence, and are not freely carried off. Mr. R. has, therefore, found it advisable to administer occasional mild laxatives, but only in such quantities as are considered just sufficient to unload the canal, without producing purging. Castor oil, infusion of senna, and sulphate of magnesia, or sulphur, have usually the desired effect, without irritating the bowels; and an enema is often of advantage. A course of mild alteratives at night, followed by a chalybeate in the morning, is sometimes required to restore the regular action of the alimentary canal after the dysenteric affection has been cured.

"During the use of the sulphate of copper, where there is soreness on pressure at the cœcum, or any part of the colon, the daily application of a few leeches, followed by counter irritation, very much assists in the cure. In delicate persons, the use of a stimulating liniment, or the emetic tartar ointment, continued so long only as to produce redness of the cuticle, is preferable to the more severe effect of the emetic tartar plaster, until pustules are occasioned, or the common blister, and is never objected to by the patient."

Mr. R. administers the sulphate of copper in the dose of from a quarter of a grain to a grain and a half, combined with from half a grain to a grain of opium, repeated three times a day.

The *sixth* article is on the Pendulous Tumour of the Ear, common in Nipal, by M. J. Bramley, Esq.

The affection consists in one or more encysted tumours, apparently arising from, or situated on, any portion of the *pinna* or external ear; most commonly both ears are affected, and it is not uncommon to see six, seven, or even more of these tumours in one individual. The most common spot for the developement of the tumour is the *lobulus*, particularly when there is but one; when, however, there are more, they are found indiscriminately attached to every portion of the fibro-cartilaginous plate of the ear. Men, women and children are alike subject to this tumour.

A curious feature in the history of this affection is, that it appears to be confined to the inhabitants of a certain part of the valley of Nipal, a small village which, with its environs, occupies about one square mile. In respect to the manners, customs, and diet of the inhabitants of this village, they are in all respects the same as those of other parts of the great valley in which it is situated.

The disease rarely, if ever, produces any constitutional disturbance, and as it attacks exclusively the laborious classes, it is usually left to take its own course. Its chief disadvantage is the extraordinary deformity it occasions, for whether the disease is matured or not, its growth, from the commencement, is so rapid, that a tumour of two months standing can seldom escape common observation, being then often the size of a pigeon's egg. At this time it appears to be nothing more than a common encysted tumour, containing a white curdy fluid. It is moveable with a broad base. Sometimes the skin is discoloured, assuming a bluish hue, and studded with a net work of minute vessels; in such instances, the tumour is painful on pressure, and more remarkable for the rapidity of its growth than where the skin retains its natural appearance. In some

the tumour is soft, in others hard, with little alteration in the above appearances; its size continues to increase, till at length the base detaches itself from the cellular tissue from whence it emanated; the ear is then drawn downwards, or otherwise displaced, by the weight of the tumour, which now becomes pendulous and generally ovate shaped. These appearances may, or may not, be preserved for a series of years, but it more commonly happens that the cyst loses its uniform firmness and elasticity, by which the shape of the tumour becomes altered. The tumour finally loses entirely its elasticity, and becomes soft and flabby to the touch, considerably diminished in size and retaining little or no trace of its former shape. This is almost the invariable appearance at an advanced period of life, though in some middle aged persons, one or two tumours may have reached this stage, while others are less advanced. The disease cannot be said to have run its course, till the whole of the contents of the cyst are absorbed; when nothing remains but a shapeless mass of thickened integument, which, from being now and then pectinated at its edge, adds to the ludicrous appearance, while the attachment of the morbid growth is now so loose that it moves to and fro, in conformity with the ordinary motions of the body.

The difficulty of arriving at any conclusion as to the probable cause of this singular affection is obvious. The natives themselves consider it to be wholly attributable to some impurities in the water which they drink. It is quite certain, according to Mr. B., that the disease has no connexion with goitre, since many instances may be seen, where these diseases arise independently of each other, though many may also be found in which both diseases exist in the same individual; animals are not subject to it, as they are to goitre. Women and girls are more commonly affected with it than men.

One striking distinction between these tumours and ordinary encysted tumours of other parts of the body is the rapidity of their growth.

The next paper is on the Numerous Cases of Apoplexy, which occurred during the Hot Season of 1833, at Chunar, by A. K. Lindesay, Esq.

It appears that the hot season of 1833 commenced early and continued long. Towards the end of May, when eighteen days of easterly wind had been succeeded by a searching west wind, before the European residents became seriously affected, sudden deaths among the natives were daily reported in considerable numbers. From all Mr. L. could learn, most of these last dropped down dead, some at their usual labours, some after exposure and excitement during the Moohurrim, and others in their houses, without any apparent illness, or any premonitory symptoms. At last it began to attack the Europeans, and in the course of the month of May and June, but chiefly from the end of May till towards the end of June, seventeen cases of apoplexy had proved fatal among little more than two hundred men. The young, the old, the drunken and the steady—those habitually exposing themselves and those who were careful—were indiscriminately attacked; in almost every case the accession was sudden, and in only one case was one side of the body more paralyzed than the other.

Mr. L. presents the abridged details of twelve cases, in which the disease was seen during life, and the body inspected after death; five others from being complicated, or equivocal, are simply glanced at.

In all these cases, very evident disease of the brain is indicated, as well by the symptoms during life as by the autopsical examination of the head after death. Some of them we should hardly consider as presenting, however, the distinguishing phenomena of apoplexy. In the only instance in which paralysis was present, it is stated that "the *substance* of the brain was throughout without a trace of disease."

"I do not mean," remarks Mr. L., "to indulge in speculating on many interesting points suggested by the pathology of some of the above cases; such as the proba-

ble influence of the organic disease, or temporary congestion of the thoracic or abdominal viscera predisposing to cerebral affection; or the likelihood of chronic arachnitis being present in many of the cases, for the thickening and whiteness of the arachnoid membrane must be supposed the effect of disease of much longer standing than that which caused death; also some of the cases militating strongly against Dr. Clutterbuck's doctrine of absolute incompressibility of the cerebral mass, for the arteries were minutely injected, the veins at least as full as in health, and yet no small quantity of serum was added to the cranial contents.

"I may add, that during the time of these cases occurring, there was a tendency to affections of the head in many other individuals; and I am willing to believe, that, as attention was minutely paid to all such cases, many were saved from the convulsive attack *from which none recovered.* In such cases, local and general bleeding, cold to the head, friction of the surface, blisters of caustic or cantharides, and the quiet and temperance insured by hospital discipline, were the means which, I suppose, averted more serious evils. In some cases headaches were obstinate; in one, partial deafness still remains; in some, the pupils continued long closely contracted; in one, they are still constantly dilated, whatever the degree of light; in others again, as soon as the threatening symptoms had passed away, perfect health was speedily re-established: in short, the lesson taught to me has been '*venienti occurrite morbo*'—once seized, I have never saved a patient."

The following paper is on the Pathology of Dysentery. By J. Murray, Esq.

Mr. Murray, in presenting his views of the pathology of dysentery, is persuaded, that, notwithstanding they differ materially from those of distinguished writers upon the disease, that this is to be accounted for, not by presuming the inaccuracy of all former observations, but from the superior advantages which he has enjoyed for observing the morbid appearances in the earlier stages of this affection. The cases from which the observations of Mr. M. are drawn occurred in a detachment of artillery drafts proceeding by water from Dum-Dum to the upper provinces. During this period, cholera broke out, and to its attack the dysenteric patients were particularly predisposed; and by it many of them were destroyed, at a period when the morbid changes connected with the dysentery were of themselves insufficient to produce fatal results. The dysenteric symptoms under which these patients laboured correspond with those described by the best writers on the disease as it occurs in India.

The post-mortem appearances, as detected in six cases of dysentery, are presented in the paper before us.

"In these cases," Mr. M. remarks, "the morbid appearances of dysentery may be traced from the first organic lesion, through all the different stages, to a return to the healthy structure. The disease appears to pass through a regular course, which may be separated into six distinct stages, viz.

"1. Inflammation, or vascularity and thickening of the coats of numerous portions of the colon."

"2. Effusion, or the formation of numerous vesicles, with the subsidence of the inflammatory action."

"3. Gangrene, or inflammation of the coats surrounding the vesicles or pustules, leading to their death, to an extent proportioned to the severity of the inflammation. The proofs of this stage are very clear, and the examples diversified, from a line and a half in diameter, the size of a common pustule, to three or four inches, involving the whole calibre of the intestine. This latter extent is evidently produced by the confluence of several pustules. The shape of extensive sloughs, in most instances, would indicate this mode of formation."

"4. Ulcerative inflammation, or the absorption of the surrounding coats, with the separation of the sphacelated portion."

"5. Granulation, or the formation of a new healthy vascular secreting surface."

"6. Cicatrization, or the contraction of the surface of the ulcer, and the formation of a new epithema."

"The progress of the ulcers in this disease bears a very close analogy to those of pustular diseases on the surface of the body, where the surface is kept moist, and

the formation of crusts prevented. In both cases they appear simultaneously, in great numbers; and several stages may in both be found at the commencement. The one is said to originate in the rete mucosum; the other commences in the vascular and nervous coat immediately under the epithema—probably in the glands of Brunner and Peyer. In both, when slight, the pustules are distinct, and no permanent marks or cicatrices are left; but when severe, the pustules are frequently confluent, and indelible cicatrices remain. In both, aggravation of the inflammation, with extension of the sphacelation, takes place, from the contact of irritating vitiated secretions, and in both, hæmorrhage from parts subjected to motion. The one is confined to the surface of the body, exposed to the action of the air, while the other is confined to the surface, not exposed to its action, and apparently only to a portion of that surface, viz: the colon. From these facts, in my opinion, the following inference may be legitimately drawn, viz: that dysentery is of the pustular order of exanthematous diseases."

The *ninth* paper is an account of Cases of Fracture of the lower Extremity. By W. W. Raleigh, Esq. These cases do not admit of condensation.

The paper following is On Goitre. By J. M'Clelland, Esq., being a series of conclusions derived from investigations into the nature and cause of that disease in Kumaon, with a view to its prevention and cure. From these conclusions, it appears that goitre is not found, in primitive districts, where limestone does not exist as a principal rock formation, or if found there, it is only in the proportion of one to five hundred of the population; while in transition and flœtz districts, where limestone prevails, one seventh of the whole population are affected with goitre. In the latter districts, the population are not equally affected in every village; but one village is affected in the midst of others which are healthy, and vice versa.

According to Mr. M'C., goitre does not depend on temperature, altitude, or aspect of irregularities on the surface of the earth, on hereditary taint, nor on the usual causes of glandular enlargements in other parts of the body. Those villages in which goitre exists, are always erected on, or in close vicinity to great limestone formations; and where the water is furnished, for the use of the inhabitants, by springs which are derived from limestone rocks. No instance to the contrary has occurred to Mr. M'C., though his observations have been extended over the space of nearly 1000 square miles, and conducted by himself in person, without a view to the support of any particular theory. It appears that the morbid principle in the water is removed, or modified, according to the distance it runs in channels of alluvial earth, impregnated with animal or vegetable matter, before taken for use. Goitre is found to affect both sexes indiscriminately; children are exempt from it, until the age of three years.

In villages where goitre prevails, it is not usual for the lower animals to be affected by it, and as no instance of the kind has occurred to the notice of Mr. M'C., he concludes that the tumours observed by others on the necks of animals, belong probably to a distinct disease.

The lowest caste of persons, who are generally slaves of the higher orders of Hindoos, are more subject to the disease than their masters, who are less exposed to the noxious influence of the water.

"With respect to the treatment of goitre, the only part of it that it is necessary here to allude to, is the necessity of changing the accustomed water, and to substitute for it the water of a spring known to be wholesome. This is better decided by the appearance of persons who have used it for a long time, or by the absence of limestone from the spring, than by any chemical analysis." "The change of the accustomed water is, therefore, the first thing to be recommended, and it is often the only thing that is necessary."

The subsequent article is Observations on Elephantiasis. By T. A. Wise, M. D. These observations extend over forty-nine pages, and although extremely interesting and calculated to throw considerable light upon this strange affection, we shall be under the necessity of passing them by, without attempt-

ing to present to our readers a view of the leading points embraced in them. A satisfactory analysis of the paper would occupy far more space than we can at present spare.

The *twelfth* paper is entitled "Notes on a New Injection for the Cure of Hydrocele. By J. R. Martin, Esq." The new injection proposed by Mr. Martin, is a solution of the tincture of iodine, in the proportion of two drachms to six of water, of the ordinary temperature. The effects of the iodine solution, we are told, seem to be immediate, the inflammation arriving at its height in about twenty-four hours, and after that subsiding rapidly. In only two instances was bleeding by leeches found necessary. Poultices, cold lotions, and purgatives generally constituted the treatment; and even these were not had recourse to in a large proportion of the cases. The cases in which the iodine injection was used, for the sake of brevity, are arranged in a tabular form. They amount to ninety-five.

The advantages of the iodine injection, according to Mr. Martin, are as follows—

"1st. It is altogether free from the danger to life so frequently occasioned by the former operation of injection with wine solution.

"2nd. The cure is effected in from three to five days, in place of from fifteen to twenty-five.

"3. The operation is greatly simplified, so much so, that any person at all acquainted with the anatomy of the parts, may operate; and the injection being so small in quantity, and, what is more important, retained—infiltration is next to impossible."

The next article is Descriptions of Some Rare and Curious Plants. By N. Wallich, M. D., &c., which is followed by a paper by W. B. O'Shaughnessy, M. D., on the Existence of a New Principle (sub-rubrine,) in Human Blood, in the Healthy and Diseased state, and in the Blood of several other Mammalia.

The doctor, in making an experiment to ascertain the amount of colouring matter in 1000 grains of spleen blood, being pressed for time, adopted a mode of analysis calculated to afford more expeditious results than the one he was previously in the habit of employing "It consisted in decanting the serum, and depriving the coagulum of its fibrin, by kneading it in a muslin bag. Alcohol was then added with a view to coagulate and throw down the colouring matter and adhering albumen. The precise amount of this albumen being readily known by data afforded by the analysis of the serum, the amount of pure colouring matter can thus be precisely computed." When the alcohol was added, and the coagulation effected, the doctor threw the mixture on a very fine muslin filter; "a very turbid fluid immediately passed through; supposing that the flakes were merely imperfectly coagulated colouring matter, he boiled the turbid fluid, in order to accelerate the separation he expected. To his surprise, however, instead of this effect, the very contrary was produced. The heated fluid, instead of coagulating, became more transparent, and all the turbid flocculi were dissolved when the boiling point was attained. Allowed to cool, the solution again became cloudy, and when at 80° Fahrenheit, a copious deposit, of a faint flesh colour, was obtained. By alternate heating and cooling, whether gradual or sudden, the same effects were indefinitely produced. A portion was filtered, and the flaky substance dried, in which state it was soluble in diluted alcohol, infusible when heated on platinum foil, and insoluble in sulphuric æther."

To those practically conversant with this department of animal chemistry, the doctor conceives that the preceding facts afford of themselves the strongest evidence of the existence of a principle previously unknown in the blood under examination. To others he thus explains the proofs of the speciality of the principle in question.

"1. The *animal* principles previously known to exist in human blood, were fibrin, albumen, oil, a compound of albumen and soda, traces of urea, and the red principle, called by some *hematosine*, by others simply colouring matter; and which I think should be termed *rubrine*, in conformity with the radical source from which the names of the other principles have been derived.

"2. The substance noticed in the above experiment could not have been fibrin, because all the fibrin had been previously removed.

"3. It could not have been albumen, as albumen is coagulated permanently by heat and by alcohol, separately or conjointly; whereas the new substance is soluble in diluted alcohol in the boiling state.

"4. It could not have been urea, for urea is soluble in hot and cold alcohol and water; but the new principle was precipitated as its solution cooled. The same remark applies to the albuminate of soda, and from this substance it was still more unequivocally distinguished by numerous other properties, which I shall subsequently detail.

"Lastly, it could not have been the oleaginous matter, as this ingredient of the blood requires very strong and hot alcohol for its solution; is fusible by heat, and soluble in cold sulphuric æther. The new principle is soluble in diluted alcohol, *infusible when heated* in the dry state, and *totally insoluble in sulphuric æther*, at any temperature."

The doctor ascertained by numerous experiments, that this new principle is of universal occurrence, in health and disease, in the Indian and European, and in all conditions of age and sex. He has also detected it in the cow, horse, goat, sheep, jackal, fox, and dog. The average quantity in 1000 parts of blood, was found to vary in amount from 10 to 15 grains:—thus exceeding considerably the amount of fibrin, and ranking next in proportion to the albumen.

In the dry state it is opaque, pulverulent, of a reddish-brown colour, totally infusible by heat, leaving a very minute earthy residuum when calcined on platinum foil or mica, insoluble in absolute alcohol or distilled water, when cold; insoluble in æther or the oils, fixed or essential, but soluble in diluted alcohol, at the boiling point, and again deposited of a faint flesh colour on cooling; redissolved instantly by the addition of nitric acid, in the proportion of one drop to 1000 of the mixture, and the solution rendered turbid by ferro-prussiate of potassa and tincture of galls; unaffected by currents of oxygen, hydrogen, nitrogen, sulphureted hydrogen, and carbonic acid gas.

The doctor was unable, from the want of apparatus, to obtain the ultimate analysis of this new principle. In regard to the relations which exist between it and the other well known animal ingredients of the blood; he remarks:

"In the first place, while it differs remarkably from the colouring matter, or *rubrine*, and from the *albumen*, we still find it participating in some of the properties of each, to a degree, that establishes a certain affinity among the entire. While it differs from the rubrine in its relations to heat and its solubility in diluted alcohol, it nevertheless resembles it strongly in the most important and peculiar of its properties, namely, the *red colour*. Again, while the new substance differs widely from albumen, also, in the mode in which they are affected by heat and alcohol, it still exhibits the same reaction with the tincture of galls, ferro-cyanate of potassa, some of the acids, the alkalies, and with the gases I have above enumerated. Thus, while on the one hand we establish the essential differences between the three substances, we trace their analogies on the other. We find a resemblance sufficiently strong to warrant us in deeming it highly probable, that in the wondrous laboratory of the living frame, this new principle exemplifies the concluding stage in the hitherto obscure process of the complete reddening of the blood. An additional and important step, it is highly probable, is thus added to our knowledge of the various changes which occur, from the time that the digestive transmutation of aliment commences until the change is consummated by the formation of blood. Dr. Prout first showed imperfectly formed or 'incipient albumen' in the contents of the duodenum and jejunem. The researches of other chemists pointed it out when fully formed in the thoracic duct. The colouring

matter, too, we may trace in the pink coagulation of the chyle, but it is still imperfect, requires elaboration in the lungs, and in point of fact, as I have ascertained by experiment on the dog, is chiefly composed of the new principle;" to which the doctor conceives that he has acquired a sufficient amount of evidence to warrant the application of the new term *Sub-rubrine.*

The *fifteenth* article is a Case of Beri Beri, with Pathological remarks, by J. Mouat, M. D.

This case, the details of which it is not necessary to give, is remarked by Dr. Mouat to have possessed too many of the symptoms usually considered pathognomonic of the beri beri of India to be separated from that peculiar and distressing malady. The disease under which the patient laboured bore, at the same time, nearly, if not all, the characteristic symptoms of phlegmasia dolens, as detailed and illustrated by Dr. R. Lee, in his valuable papers on that subject. Indeed, so far as a solitary case can confirm, the dissection in this instance, would tend to the supposition, that these two diseases, if not identical, are at least so nearly allied, as to entitle them to be classed under the same head; though, perhaps, different in species. Dissection discovered, in the case related, considerable lesion of the venous system, particularly of the left lower extremity, which was the one affected with the disease. The femoral and external iliac vessels of that side were very much contracted. The femoral vein was very small, and in several portions was nearly obliterated, by being plugged up, apparently by an organized substance in layers, adhering to the vessel, of a brown ochry colour, very similar to the substance observed in aneurisms, where nature attempts a cure. The vessel was diseased to about six inches below Poupart's ligament, and the disease extended into the external iliac to about an inch below the formation of the inferior cavæ, and this portion seemed flaccid and contracted like a piece of tape. The lower portion of the cavæ also seemed smaller than natural; at the junction of the external and internal iliac, there was a clot formed, but not organized. The vessels were closely united together, and enveloped in a quantity of brainlike fat, a good deal of which appeared in various parts of the body. The internal coat of the femoral vein in parts, was thickened, in others, as if inflamed. The interior of the arteries presented nothing remarkable, and the dissection was not made more than nine or ten inches down the thigh.

Dr. M. remarks, that even though future observations should disprove the connexion of the beri beri with phlegmasia dolens, yet a parallel of the two diseases will tend to establish, what is very important, a general constitutional disturbance, accompanying or arising from a local affection, analogous to the latter disease, agreeing with it in its progress, general history, and pathology, though it is to be presumed, excited by a totally different cause.

The next paper is by the late W. Twining, Esq., presenting Some Account of the Fevers which prevailed in Calcutta in the year 1833. From this very excellent and strictly practical paper we shall merely present one or two extracts. To attempt to condense it would be neither doing the author justice nor benefitting our readers—the article must be read entire to derive from it the valuable hints it is calculated to afford.

During an unusually oppressive hot season, more particularly during the months of April and May, there occurred no remarkable increase of sickness in Calcutta. The common inflammatory fever, however, frequently occurred, "and its worst cases appeared among those who were exposed to distress, fatigue, and privations, during the gale of wind and inundations which happened about Diamond harbour and the vicinity, on the 22nd of May. The local affections attendant on these fevers were for the most part referrible to the head and stomach; in some cases acute inflammation of the liver was present, and affections

of the spleen were observed during the course of the disease, but more especially towards its termination."

In those cases in which the symptoms of gastric affection were predominant, with morbid tension at the præcordia, and pain on pressure, attended by sickness and vomiting, besides the use of the lancet, frequent applications of leeches to the region of the stomach were required; and after the arterial action and morbid heat were subdued, a degree of irritability of the stomach occasionally called for the employment of a blister.

"In those cases, in which the gastric affection was predominant, the frequent use of drastric purgatives was avoided, and after the bowels had been thoroughly emptied by an effectual dose of senna mixture or jalap, mild aperients are ordered only where any evidence of accumulation in the bowels existed; and when enemeta could be made to procure evacuations, other means were avoided. Under the existence of much gastric irritability, the frequent employment of strong purgatives is apt to produce flatulent distension of the belly, to increase gastric irritability, and not only to fatigue the patient by causing frequent efforts to stool, but sometimes repeated watery evacuations, especially after saline purgatives, are apt to be followed by dangerous exhaustion, more or less allied to the collapse of cholera."

"I would beg leave," says the author, "to say a few words relative to those severe cases of continued fever, as well as remittent, in which active treatment was not commenced early, or where, from particular violence of the disease, local inflammations and congestion could not be subdued by the lancet, aided by leeches and purgatives. A degree of local disease of the most dangerous nature, is then liable to take place. I allude to the sero-albuminous effusions from the capillary vessels, which take place between the tunica arachnoidea and pia mater, at the top of the hemispheres of the brain, as well as at its base, and in the spinal canal between the arachnoid and dura mater. Similar effusions also occur at the root of the mesocolon, and in the cellular structure about the duodenum. These effusions sometimes seem to coincide with the natural subsidence of active pyrexia, and a material change in the patient's condition; which change is of an unfavourable character and too often proves the precursor of death. In those cases where the effusion has taken place in the cellular structure about the duodenum, or at the root of the mesentery or mesocolon, there is usually much anxiety, and prostration of strength, with some fulness of the belly. When the cerebral effusions occur, there is more or less of stupor and indifference, although the patient often answers questions correctly; he lies on his back with the limbs stretched straight, or he slides towards the foot of the bed; the face is often pale, and the pulse slow and soft, or the cheeks slightly flushed, and the pulse quick and weak; the pupils are usually small, and the morbid heat moderate, if not subdued. In the latter stages, the hands are often put forth to grasp some imaginary object. When a patient is approaching the state above described, the only chance of saving life, is by the free administration of mercury; if the patient be not already salivated, 12 grains of calomel, or the same quantity of blue pill are to be given three times a day, and if any degree of morbid heat remain, four grains of antimonial powder are to be added to each dose. If there be not a free stool once a day, it is requisite to give a small dose of jalap, with cream of tartar, once in thirty-six hours; but if there be little or no morbid heat, and a watery purging exist, it is often necessary to combine some opium, or some hydrarg. cum creta, with the calomel, and use mercurial frictions. Small quantities of cream of tartar and sp. æther. nitros. added to the drink, are also often of service, by acting as diuretics. In these cases, the frequent administration of purgatives is injurious, by preventing the due action of mercury; and active purging is apt to bring on a tympanitic state of the belly, which must be regarded as a most dangerous symptom, when induced by purgatives, at this stage of the disease."

The succeeding paper is entitled "Observations on Dracunculus." By A. Duncan, Esq.

Mr. Duncan has ascertained, by the microscope, that the white matter, like thick cream, filling the inner tube of the dracunculus worm, is a mass of living young ones. "It requires dilution to permit them to be distinctly examined.

They are very lively—He measured many of them, and found them to be about the fifty-seventh part of an inch in length, somewhat like in shape to the tadpole of a mosquito, but *much*, very *much* smaller, and more slender in proportion to their length; fully a third consists of a fine extremity like a string; they swim after the head, but can fix their slender extremity to an opaque substance, and work the body to it. They have a dark line, in some two, running along the length of body. He suspects it is always two, but approaching so near, that from their rapid motion he could not always make it out. When disturbed they coil themselves up, as a snake does, and lay as if dead for a short space, then cautiously unrol themselves, and begin to play again." Out of, he thinks, two worms, the young ones had double tails, which they separated and reunited with great rapidity; in the latter state they appeared exactly as one; these were rather thicker in the body than the others.

It is said that the dracunculus is separately male and female. Of this Mr. D. is unaware; all the large ones that he examined were full of young ones; the small ones he took to be imperfectly grown.

The conclusions to which the author has come, on the subject of dracunculus, are:

"1st. That when the time of producing its young has arrived, it then exerts itself to get out of its nidus.

"2nd. That the young are capable of fixing themselves to an appropriate substance, and working themselves into it.

"3d. That the period of growth from the animal's birth to the procreation of its young is somewhere about twelve months.

"4th. That the irritation produced by a broken worm is to be mainly attributed to the young ones. If it be said, that it is extraordinary that of such a multitude of young ones so very few should live in the human body, I can only admit the fact, and conjecture that the chief cause of their destruction is the excessive suppuration caused when a number of them escape internally. I have examined the purulent matter of many of these abscesses, and found the young animals sufficiently plentiful in it, but I do not know that I ever found any alive, or at any rate I found none in the lively state they exist in other circumstances; hence I suppose pus is an improper vehicle for them to live in, and that the extensive suppuration is a means to prevent their excessive multiplication in the body, and, when externally, the parts around are in a state of inflammation."

Article *eighteen.* On Epidemic Diseases, which occurred at Bangalore during the year 1833. By T. Mouat, M. D.

The epidemic diseases principally treated of by Dr. Mouat, are the influenza and cholera. His remarks in relation to these affections are interesting; but as they offer no very striking or novel points either in regard to their nature or treatment, and our space being limited, we shall not attempt to offer an abstract of the paper.

The ensuing paper by T. E. Dempster, Esq., On the Climate of Van Diemen's Land as a Resort for Invalids from India, we pass over, as interesting chiefly the physicians and inhabitants of the latter country.

Article *twenty* is entitled Observations on the Fever which Prevailed at Howrah during the months of June and July, 1834. By Duncan Stewart, Esq., M. D.

"Of the early fever cases," says Dr. S., "those, namely, which occurred about the middle of June, after the first rains, the greater part were continued, distinctly referrible to some error of diet, exposure, or cold; coming on abruptly with a chilliness, pain in the back, loins, and knees, followed by nausea, headache, hot skin, thirst, &c. In five cases the head seemed to suffer most: one of these was characterized by a pulse, which for three days did not rise to sixty, there was no flushing of the face, redness of the eyes, headache, nor hot skin, but a great unwillingness to speak, a slowness of answering, and apparently of comprehending questions: intolerance of light and obstinate costiveness. In a second, the pulse continued at eighty; there was little or no heat of body, a clean tongue,

and not much thirst; the cerebral symptoms were drowsiness, continued pain in the back of the head, and intolerance of light and noise. Of the other cases of continued fever, the principal determination seemed to be to the mucous membrane of the bowels, and to the liver; the secretions of these organs being irregular, and of a highly irritating sort, causing perpetual nausea and fatiguing retching; the pulse was generally quick and hard, the heat of the body pungent, the tongue dry and pointed, of the colour of an old brick, with red edges, and not becoming furred with any brown or thick mucus until the third day, when freer secretion had re-commenced. In all these cases, venesection was freely and repeatedly employed at the commencement, followed by scruple doses of calomel immediately, and then by doses, night and morning, of ten grains of calomel, and fifteen grains of colocynth, with a purge of compound powder of jalap at noon; leeches and blisters were useful towards the end of the case; the tepid bath, in cases of much gastric irritation, was found very beneficial, and the cold dash on the head had a most soothing influence. The most remarkable circumstance, at that time, which fell under my notice, was the proclivity to cholera; one lady was attacked with it at two o'clock in the morning, after taking the night before, of her own advice, five grains of calomel and four of James' powder; and another seemed to threaten cholera, from the use of infus. sennæ and infus. rhei with a little epsom salt. I, therefore, in almost every case, combined opium grains with each dose of calomel and colocynth, and never found it to interfere at all with their operation; on the contrary, the soothing effect of the opium on the irritable fibre, was such, as will induce me in future to make a freer use of that powerful drug, than I have been accustomed to do. None of these cases could bear quinine during convalescence. The minutest quantity of it, given in any way, produced deafness, noises in the ears, and tightness across the eyes. Fortunately, none of them required tonics, and all recovered well and rapidly."

"From the 10th of June onward, daily new cases of fever occurred, which for four or five days, at first presented no peculiarity sufficient to characterize them. The patients themselves complained of an 'inward heat,' of general indisposition, loss of appetite, want of sleep, occasional flushings and chills. The tongue was always white or pale, and the bowels out of order, generally costive, and the stools of a paler colour than natural. There being an evident deficiency of the biliary secretion, these cases were usually treated with two pills, at noon, at six P. M. and at bed time, viz. ℞. pulv. jacobi gr. ij., calomel gr. iv., colocynth. ex. gr. vi. in two pills, and a dose of pulv. jalap, comp. castor oil or sennæ in the morning. These remedies certainly cleared the bowels effectually, but did not always restore healthy secretion. On the contrary, the evacuations were generally at first pale and feculent, then green and watery fæces, then olive coloured mucus; then dark slimy, pasty, or frothy discharges; then pure bile, mixed with the appearance like chopped tea leaves; but about this time, that is, after the fifth or sixth day, a morning rigor occurred at ten A. M., followed by a hot fit, and a sweating stage towards five in the evening—a night paroxysm came on *without shivering* at nine or ten P. M., and lasted till three or four o'clock, A. M. Next day, one hour earlier than on the former, the shivering again occurred, and the hot fit and evening paroxysm as before. A third paroxysm was usually prevented from coming on the next day, by large and full doses of quinine, but its period was marked by slight heat of the hands and head, and the use of quinine was intermitted until the period was over, and again resumed at four P. M. In none of these cases, some of which were very severe, and followed by long and great depression, did any such symptoms present themselves, previous to the first well marked rigor, as seemed to call for depletion; but during the first fit in all of them, I am persuaded that the liver was relieved greatly, and a more perfect remission obtained, from the employment of eight or ten leeches, the bites of which were allowed, by the help of a poultice, to bleed freely after their removal. The previous free purgation by colocynth and calomel had likewise left the bowels so clear, and as far as their functions was concerned, so quiescent, that full doses of quinine, i. e. two or three grains in solution, were borne every hour with perfect safety, the moment the fever-paroxysm had subsided; although at this time the liver was pouring out ounces of perfectly black bile, which passed along the bowels, and was discharged for several successive days, at this stage of the fever, perfectly fluid and clear, without a shred of mucus or an atom of fæces. As soon

as these free discharges of bile commenced, calomel was laid aside for quinine, and a gentle stimulus supplied to the bowels, pulv. jalap. comp. or senna and manna, daily. In a few days more the stools changed their appearance to a healthy brown colour; and in females the first and most unfailing symptom of returning health was the reappearance of the catamenia."

Observations on Land Scurvy, by I. Hutchinson, Esq., is the title of the *twenty-first* article. This paper does not present any thing particularly interesting.

The next article is a Case of Fracture of the Trochanter. By J. Clarke, Esq.

A muscular man aged thirty-two years, of intemperate habits, while running along a sloping pavement was thrown down with great violence, and fell with the whole weight of his body on the left hip and thigh. He was stunned by the fall, and felt unable to rise, but upon being assisted he walked a few paces to get into a house, supported by a man's arm. When seen a few hours after the accident, there was considerable swelling with slight contusion over the great trochanter, and the parts about the hip joint were tense and painful. He lay in bed with his limb fully extended, and there were no symptoms indicative of either dislocation or fracture of the femur; but on raising the foot and rotating it inwards, he shouted in agony, the pain shooting from about the trochanter along the bone to the knee, in which joint the pain was most excruciating. Suspecting that a fracture had occurred within the capsular ligament, both limbs were placed in accurate apposition, but not the slightest deformity or shortening could be detected. The trochanter described a naturally large circle on rotation, and no crepitus could be felt—the foot fell slightly outwards, but not more than would occur in a limb in which the muscles had been much bruised. Leeches and fomentations were applied to the injured part, and the limb was kept extended and supported by small pillows placed under the outside of the knee and ankle. The inflammation and swelling subsided, but the pain on rotation was so excessively severe, being referred as before principally to the knee, and extending along the bone, that Mr. C. felt convinced the bone was injured, although the nature of the injury was ambiguous—pressure on the hip and trochanter did not give much pain. Seven days after the accident the patient was attacked with delirium tremens, and died the next morning.

"On opening the articular cavity (of the hip) reddish coloured synovia escaped; the round ligament was healthy, but more vascular than usual; the neck of the bone was uninjured; the bottom of the acetabulum was of a deep red, showing that the head of the bone must have been forced with great violence against it; hence the pain felt in the knee, as is usual in inflammation of the hip joint. Extravasation was discovered within the capsular ligament, and around the trochanter major; and on clearing away the muscles, the trochanter was found crushed and shattered, several pieces entirely detached, and fissures extending deeply into the shaft of the bone. The cells were filled with coagulated blood, and no attempt at reunion or reparation had taken place."

On examining the bone after maceration and drying, it was found that a fracture of the bone through the trochanter had taken place, but without displacement.

Article *twenty-three*. Cases of Lithotomy on Asiatics. By R. N. Bernard, Esq. A notice of this paper would not be particularly interesting to our readers.

Article *twenty-four*. Further notes on the Cure of Hydrocele by Solution of Tincture of Iodine. By I. R. Martin, Esq. All the cases in which this solution has been used as an injection, have terminated successfully, as far as could be ascertained, even those who underwent labour and fatigue from the moment of the operation, have done well, so that the safety and expedition of this plan of cure would seem to be established. In this paper the author calls attention to twelve cases of double hydrocele, treated *on both sides at once*, and which recovered with quite as much ease and expedition as the single cases

From the facts set forth in the present article, Mr. Martin considers himself warranted in drawing the following additional corollaries:

"1st. The operation with tincture of iodine solution is greatly less liable to failure than that with port wine solution.

"2nd. No serum has ever been reproduced a few days after the operation, with iodine solution.

"3d. Care in the after treatment, upon which so much depends in the old operation, would seem here to be little requisite."

Article *twenty-five.* Account of an Aceto-Spirituous Tincture of Cantharides. By D. S. Young, Esq.

The substance of this and the two succeeding papers on the same subject, was noticed in our last quarterly periscope. (Vide, No. xxxvi. p. 498.)

Article *twenty-eight.* Case of Congenital Cataract in Both Eyes, Successfully Treated by Operation. By D. S. Young, Esq. The patient was a native lad twelve years old. He had congenital cataract of both eyes. He stated that he knew the difference between day and night, but could not see any objects that were presented to him. He had no conception whatever of colours. The pupils dilated and contracted in a healthy manner. After the pupil was dilated with belladonna, Mr. Young operated on the left eye by passing a spear pointed needle into the posterior chamber, in front of the lens, in the usual manner. The anterior capsule of the lens was lacerated, and the whole contents, which were milky and flocculent, discharged into the anterior chamber. The needle had now to be withdrawn, the turbidity of the anterior chamber preventing the further progress of the operation. The instant the fluid contents of the capsule, by freely mixing with the aqueous humour, had become diluted, so as to admit of the partial transmission of light to the retina, the boy saw the objects around him, and his language and gestures were highly expressive of the delight he experienced, from enjoying the first manifestations of a new sense. The eye was tied up, and a wet cloth kept to it, that had been dipped in an astringent wash. In seventy-two hours, the whole of the fluid cataract was absorbed; the anterior chamber had become free from turbidity, and a very small particle of the capsule seen before the axis of vision. The pupil was clear and black, and contracted powerfully; but the light was so painful and embarrassing to the poor boy, that he would not for several days permit the bandage to be taken off. On the 10th day after the operation, the sight had improved so much, and the susceptibility to light had so far abated that the operation was performed on the other eye. The cataract of this was of a soft cheesy nature; it was cut up into as small fragments as possible—several of these were pushed into the anterior chamber and one large fragment into the vitreous humour. Some adhesions to the uvea were destroyed. In six days the pupil was black and clear, and all the fragments of the lens had become absorbed; the sight was better in this than the other eye: little inflammation supervened.

On his return from the Residency to Bolaram, Mr. Y. brought the boy with him, and was for some time engaged in the interesting task of giving him instructions relative to colours, &c. He was soon able to distinguish any colour; but if the boy wished to be very correct, when asked the name of any thing presented to him, he would first look at it, and if he had seen it before, and it had been explained, he at once named it; but if the object were new, he would tell the colour, and then feel it with his fingers; and should it turn out to be any thing he had been accustomed to handle before he got his sight, he at once exclaimed a pair of scales, rice, curry stuff, or whatever it might happen to be. The condition of the boy three months after the operation is thus described:

"His vision is much improved, and he now seems to recognise almost every object that is brought within a foot of his eyes. Distant objects he describes as either light or dark, but he has no correct perception of them. His field of *dis-*

tinct vision is therefore limited; but he has lost much of the awkwardness and helplessness, which were so apparent two months ago, and he now walks about with some confidence. The eyes, with the exception of a rolling and want of entire association in their movements, have a healthy appearance."

Article *twenty-nine.* Case of Arrow-Wound of the Head. By A. Stone, Esq. Captain —— received on the morning of the 24th of October two arrow-wounds, one in the head, and the other in the back. On the morning of the 27th he stated that he felt slightly stunned when wounded, and that the arrow could not be withdrawn without force; but he did not complain of much uneasiness. The wound was in the middle of the occipital bone, and was partially closed. On the 31st complaining more of his head, and feeling feverish, he was on the ensuing day reported sick, when he had a purgative, and in the evening was bled to syncope; next day fifty leeches were applied to the head. 2nd Nov. Felt greatly better; bowels opened two or three times; the wound appeared a little puffy; it was opened with a lancet and a poultice applied—tongue very foul and loaded. 3d. Headache; tongue still foul; pulse full and frequent; was bled 15oz., and purged by calomel and colocynth: Stomach irritable; no fluid medicine retained. 4th. Stools very offensive; headache chiefly confined to temples; skin hot and feverish. Four grains of calomel were repeated three times and cups applied to the neck. 5th. Shifting pain in head; wound discharging a small quantity of good pus; tongue loaded, stools dark and offensive; again cupped: calomel continued; a purge of colocynth and resin of jalap given, which acted freely. 6th. Much better; skin cooler and moister; stools dark and offensive; pulse eighty; tongue cleaner. In the evening sat up in a chair, and complained soon after of being cold, shivered, and complained that his head gave him great uneasiness; venesection to 14oz. Forty leeches to head, previously shaved, and cold cloths applied; five grains calomel every two hours during the night. 7th. Calomel continued, and the bowels pretty freely opened by enemata; pulse eighty; is sensible when roused; but occasionally talks incoherently; pain of head moderate; again leeched and cupped: stools green, black and fœtid; bowels moved with difficulty; tongue furred and dark; urine high coloured; pupils sensible; no paralysis; pulse variable in strength: blister to the neck; wound again opened, giving vent to a slight discharge; fifty leeches to the occiput. The bone was felt bare, as on other occasions, but the probe could not be made to enter the cavity. From this time until the morning of the 14th, when he died, he gradually got worse. The fever came on every second day, with a slight exacerbation on the intermediate ones; his mouth was a little sore from the mercury, but the stools continued dark and fœtid to the last; he was at times sensible, but for the last two or three days comatose.

"The head was examined on the 14th. The scalp presented nothing remarkable; on raising the scull, about an ounce of dark venous blood escaped; the pericranium was detached for a small space near the wound; membranes generally were free from disease; the vessels of the brain rather more turgid than usual. The arrow, a round one, had penetrated a little to the left of the centre of the occipital bone, slanting to the external wound. The dura mater and brain had been wounded, the latter not deeply; two splinters from the internal table were loose: one of them about the size of a split pea, was lying on the dura mater near the wound; there was no depression of bone. On opening the dura mater, about half an inch from the surface, an abscess was discovered; the left lateral ventricle was also full of matter; in both abscesses pus, to the extent of two or three ounces, was contained. The substance of the brain in the tract of the abscess was pappy and soft."

Article *thirty.* Cases of Colica Pictonum, with observations. By D. Stewart, Esq. The most remarkable circumstance connected with the history of these cases is the length of time, eight or nine weeks, which intervened between the administration of the poison, carbonate of lead, and the occurrence of

the acute symptoms of colica pictonum. "On this head," remarks the author, "I find it stated by Dr. A. T. Thomson, that the effects of the poison of carbonate of lead are cumulative, like those of digitalis; and the above cases seem to be strikingly illustrative of this observation, and may account for the universality of the seizures about the same time."

The *appendix* to the present volume contains twenty articles, being chiefly short notices of cases. Mr. Brett presents a notice of five cases of blindness from cataract, one congenital and four from early infancy, successfully treated by operation. One case occurred in a native aged twenty-five years, who had been blind from the age of five years. The operation was successful on the left eye, but the right became amaurotic, after rather a smart attack of inflammation. The case is considered principally remarkable as showing the aptitude of the optic nerve to resume its functions, after having remained for so long a period as twenty years in a dormant state.

Mr. Gilmore gives an account of a man, in whose stomach a number of rupees were found on post mortem examination. The patient was said to have laboured under an anomalous affection characterized by agonizing pain at the pit of the stomach, recurring in paroxysms, only to be alleviated by strong external pressure, but as it was unattended with any unequivocal indications of constitutional disturbance, the man was set down as an impostor. He occasionally was affected with fever or diarrhœa, but never complained to the surgeon of the pain in the stomach. A week or two before his death, a great change was perceived in his appearance, and it was found that he had diarrhœa, and laboured under great debility. Tonics and opiates were administered, but he gradually sank, without alluding to his former weakness or seeming to endure much suffering. On opening the abdomen Mr. G. was struck with the general unhealthy aspect of the viscera, particularly of the stomach, which was greatly elongated, contracted in its calibre, thickened in its coats and altered in its colour. While searching for the pyloric extremity, the serous tunic gave way, and through the small circular perforation thus formed, the semifluid contents of the stomach escaped.

A large indurated moveable mass was now discovered within the viscus, which was conjectured to be a scirrhous tumour, or a bone, but a bystander mentioned that he had once heard that the deceased many years before had swallowed fifteen rupees, and that the tumour felt was probably formed by the money; on laying open the stomach, nine pieces of silver, placed *en rouleau*, were found at the pylorus; close to which a circular ulceration, with dense indurated edges, had been excavated, the lesion of the base of which had allowed the aliment, as before stated, to escape. The stomach besides being thickened, was lined internally with a tenacious gray varnish, and embossed as it were, with large prominent veins. When about to rip up the intestines in search of the other six rupees, a convict informed Mr. G. that the deceased had at successive times passed that number by stool. But little impression had been made on the coin by the gastric juice.

Mr. Rose relates a case of cholera, successfully treated by copious draughts of cold water. When brought to the hospital the patient was in a complete state of collapse. Before the arrival of Mr. R. a large dose of calomel and laudanum had been administered, which was immediately rejected by vomiting. The patient was now supplied with *cold water* ad libitum. His thirst was excessive, and in alternate drinking and vomiting, he continued throughout the night, showing symptoms of gradual improvement. At six o'clock, A. M., secretion was completely established, stools no longer passed involuntary, and in a short time after, the urine commenced flowing. The secondary fever was smart, but manageable, and the man returned to his duty five or six days afterwards. About three o'clock, P. M., of the first day, a second dose of calomel

and laudanum was by mistake administered, but as these medicines were immediately rejected, Mr. R. does not think the successful result can in any manner be attributed to them.

As the Calcutta Transactions is a work to which few of our readers can have access, we have endeavoured to give them a very full analysis of the most interesting of the articles contained in the present volume. We have carefully abstained from any comment upon the facts and opinions advanced, in consequence of our limited space, and the extent to which this article had necessarily to be extended in order that a fair, and at the same time, useful abstract of the different papers might be presented.

D. F. C.

Art. XV. *Recherches sur les complications qui accompagnent la Rougeole chez l'enfant; thèse presénté et soutenue à la Faculté de médecine de Paris, le* 15 *Avril*, 1835. Par Isidore Boudin, Docteur en médecine; Elève des hôpitaux; membre fondatuer de la Société Médicale d'observation.

Researches into the Measles of Children, &c., by Isidore Boudin, M. D.

In the month of May, 1832, the measles broke out in Paris, and reigned for several months in an epidemic form. A number of children attacked with it at this time were received into the children's hospital, and placed in the ward of M. Jadelot, where the author of the above thesis then fulfilled the duties of resident physician. Those whose histories form the subject of this work, had become orphans during the prevalence of the cholera, and had been placed by the public authorities in a poor house in the rue de l'oursine; from thence, when attacked with measles, they were removed to the children's hospital, on which account it was impossible to obtain any information in relation to their condition previous to admission. The symptoms, at the time of admission, were examined and recorded with the most scrupulous accuracy, and all the means of exploration which long habit had rendered familiar were put in requisition in order to supply, as far as possible, the deficiencies which must necessarily exist in the histories of disease amongst children on account of their inability to give any satisfactory account of their own feelings.

M. Boudin is well known in Paris as a successful and indefatigable observer. He has here given us the analysis of only ten cases, occurring in children between the ages of two and seven years, and terminating fatally in all, so that we have an opportunity of comparing the symptoms with the post mortem appearances; the precise condition of all the organs, whether healthy or unhealthy, having been fully described.

The constitution of all these children, judging from their general conformation, appeared to be good; there were no indications of a scrofulous habit of body.

In every case the eruption was well marked and rather of a red than rose colour; about the second day, and from that to the fifth, it began to assume a violet aspect. The pulse varied from 160 to 130 per minute. The usual symptoms of simple conjunctivitis existed in every case except one, and in this a violent purulent opthalmia discovered itself, which terminated in the complete destruction of both eyes.

In six cases, the tongue is described as being of the same colour as the lips towards its point, and covered with a slight whitish fur towards the base. In four the redness was a little more vivid. Humid at first, it became dry towards the termination of the complaint. Notwithstanding this nearly natural condition of the tongue, evident marks of inflammation of the stomach were found in several cases. Thus in three of them there were found from five to twelve ulcerations in each stomach. These ulcerations were from two to three lines

in diameter, of a rose colour at their borders; the cellular tissue immediately beneath was a little thickened and more injected than natural; the mucous membrane around was thickened and softened. In two others, where no ulcerations were found, the mucous membrane was thickened and mamelonnated. In the remaining five it was healthy. Thus we see that the tongue in those cases did not indicate the condition of the stomach. This same result has been arrived at by several pathologists of modern time, and especially by M. Louis, who thinks that the state of the tongue is dependent not upon that of the stomach, but upon the greater or less continuance and severity of the febrile condition. Vomiting occurred in only one case, and there a great number of lumbrici were found. Seven of the patients had from four to six liquid stools per day during the whole course of the disease, and in two cases the belly was tympanitic, hard and painful upon pressure. The mucous membrane of the small intestine presented its usual healthy characteristics in all except two cases, in which latter, several red spots, varying from two to six inches in length, were found; the membrane in the same parts was very much softened and thickened. The cellular tissue beneath was also very much injected and a little thickened. The mucous membrane of the large intestine presented evident marks of inflammation in four cases, being thickened, softened and of a bright red colour over a greater or less extent; in two of them it was ulcerated, and in a third covered by a false membrane.

In every case, during life, the pharynx and neighbouring parts were of a bright red colour, and the tonsils swollen, but nothing analogous in character to the eruption upon the skin could be found.

The cough was uniformly frequent and without expectoration. In the four cases of pluero-pneumony with effusion of liquid, bronchial respiration and broncophony were heard over the affected part, where the sound on percussion was also flat; but in those cases of pneumonia, where no effusion existed, the dulness on percussion was much less marked than it is in adults under similar circumstances. This observation is one of great practical value, and of the justice of which we are fully convinced from the results of our own observation. Crepitant râle was present in nine cases, but more coarse and loud than in the adult. After death the lungs presented the usual signs of engorgement and hepatization in nine cases, but the hepatized portion, when cut into, instead of being granulated as in the adult, presented a smooth and polished surface. The same remark has been made by Dr. Gerhard. In seven patients, both lungs were the seat of disease, and in all except one, the inflammation travelled from below upwards.

It has been already mentioned that the eruption on the skin pursued its usual course until the second, and from that to the fifth day after the admission; but from this time the skin became of a uniform violet colour. Our author thinks that it is quite evident, upon a comparison of the symptoms and lesions, that the developement of the pneumonia was the cause of this interruption in the progress of the eruption. This is not improbable, but still it should be recollected that the pneumonia existed for several days previous to this change in the character of the eruption, and we are not informed whether the latter coincided or not with the supervention of violent pneumonic symptoms; a circumstance which, however, it strikes us, is of essential importance to be known before the question could be satisfactorily determined.

The functions of the brain seemed natural in all except two children, in whom there existed noisy delirium at night. In these the brain was found of natural consistence, but its cut surface presented a great number of red dots; the cortical portion was more of a fawn colour than common; the ventricles contained ℥ss. of serosity; in one the serous membrane was injected and opaque, whilst in the other the veins on the surface were considerably engorged with blood.

The mean duration of the disease was seven days.

The treatment consisted in local and general bleeding, cooling drinks, emollient cataplasms to the abdomen, injections, and stimulating applications to the extremities, with blisters to the thorax and extremities in three cases. The loss of blood appeared to exert no influence whatever upon the progress of the pneumonia, only the general bleeding appeared to have the effect of diminishing the fever for some hours. M. B. further states that at the children's hospital, the supervention of pneumonia in patients of from two to seven years of age affected with measles is almost uniformly fatal under any plan of treatment whatever.

During the epidemic of 1832, a number of children were attacked with purulent ophthalmia, in which cauterization with nitrate of silver was successfully employed.

The following is a translation of Mr. Boudin's account of the mode in which the treatment was instituted.

"A considerable number of children, who were not affected with pneumonia during the attack of measles, had very severe purulent ophthalmia. Simple conjunctivitis existed at the time of their admission into the hospital; towards the third and fourth days, the conjunctiva, enormously distended, secreted a great quantity of pus which, in running down the cheeks, caused erosions of their surface. . . . . Leeches applied to the external angle of the eye, or immediately beneath the eyelid, or upon the conjunctiva itself; bleeding from the jugular vein, did not arrest in any case the progress of the disease. Blisters, and setons to the back of the neck, were alike unsuccessful. On the sixth or seventh day, the cornea became opaque and deeply ulcerated, and the contents of the eye were discharged. The greater number died; others recovered their health but with complete loss of sight.

"Discouraged by such complete want of success, M. Jadelot permitted me to employ a method extolled by the Germans, viz: cauterization from the very outset, of both the palpebral and ocular conjunctiva, by means of a stick of nitrate of silver. I made choice of four new patients who had entered the ward the same day, and all affected with double purulent ophthalmia. I determined with precision the quantity of purulent matter discharged during the day, and the condition of the eyes: the transparent cornea was untouched. The little patients being firmly placed, the eyelids separated and turned outwards, I passed a stick of lunar caustic over the whole extent of the conjunctiva, then washed the eye with a sponge and water. Twelve hours afterwards, the quantity of purulent matter had diminished one-third; the conjunctiva was less swollen, but the redness was still very great. This cauterization, unaccompanied by any other treatment, was repeated every day in the afternoon with the same precautions, and in the space of from seven to ten days, there remained only a very fine capillary injection, all purulent secretion had completely disappeared. This method failed in two children, whose corneas were already deeply ulcerated when they came to the hospital; but it succeeded in all those in whom it was employed at the commencement. We had ten cases cured in the course of twenty-five or thirty days."

Our friend, Dr. Gerhard, of this city, was witness to the favourable results of the above treatment, and in fact assisted in carrying it out, being engaged at the same time in making his own observations at the Children's hospital.

T. S.

ART. XVI. *A popular Manual of the Art of Preserving Health; embracing the subjects of Diet, Air, Exercise, Gymnastics, General and Physical Education, Occupations, Bathing, Clothing, Ventilation, &c. &c., designed for the use of all ranks and professions in society.* By Mr. J. B. DAVIS, Surgeon. 8vo. pp. 504. London, 1836.

The importance of the principles of Hygiene and the rules thence resulting, as adapted to the preservation of health, has never been fully appreciated by

the public generally. Even by the medical profession it has been strangely misunderstood and underrated until within a very recent period. A more correct knowledge, however, of the structure and laws of the human organism, and a more intimate acquaintance with those circumstances and agents by the influence of which the health, vigour, and symmetrical developement of the living body are maintained, promoted, or impaired, have taught the medical philosopher that much may be done, not merely to prevent the occurrence of diseases which result ordinarily from personal ignorance or imprudence, but to ward off those maladies which prevail within certain districts of country, or amid certain communities, and to disarm to a very considerable extent even the most malignant and wide spread pestilence of its mortality. As Mr. Davis correctly remarks—

"There is no longer a shadow of reason for doubting that the preservation of health, and the material prolongation of life, are largely within the control of intelligence. The matter is established on the unequivocal evidence of experience and statistics."

The science of Hygiene, when properly considered, is one of wide extent, embracing as its objects Health, Beauty, Knowledge, and Happiness. It teaches "the means of developing and perfecting the organs and faculties of the body and mind, which is *Education* in its largest sense, physical, moral and intellectual." It points out "the means of directing, of modifying, and of equalizing the organs in the exercise of their functions, so as to procure health and longevity." And, finally, "having conducted man to the term of life in health and comfort," it indicates "the means by which he may obtain *natural* and *easy* death."

The study of Hygiene, when properly pursued, is calculated to increase the real comforts of every individual in society. To the legislator who is desirous of being instrumental in averting evils of daily occurrence, and of diffusing the largest portion of happiness amongst the greatest number, it is indispensable.

"The health and longevity of a people constitute the strength of a commonwealth. In these, and that state of well-being of mind and of body they conspire to produce, must chiefly reside the peace and prosperity of the society. As the health of the inhabitants of any state largely depends on their knowledge, virtue and prosperousness, on the cultivation of the soil, on facility of communication, on draining, on the supply of food, both in quantity and quality, on the construction and situation of dwellings, on arts, manufactures, and other occupations, on clothing, and on many other influences which directly or indirectly come under the cognisance of their rulers,—the share of these latter in the important affair of its preservation is unequivocal, and imposes a series of momentous duties.

"Whilst, therefore, the judicious instruction of the public mind in Hygienic science has an intimate relation with our individual and social happiness; whilst it is of such vital moment in a State in which the human powers are exposed to a larger number and extent of artificial influences—all of which having an active operation on the health—than perhaps ever before occurred in the history of man's race, it may well excite our surprise that such indifference has so long prevailed to subjects of public and private Hygiene in a free country like this."

"It should be recollected that it was amidst the free governments of antiquity, that *public* Hygiene had its origin, and liberal institutions are the natural soil of vigour and happiness. Here life obtains an additional value; intelligence and prosperity, the instruments whereby it may be fostered, and husbanded, prevail. Such, too, is the soil in which to scatter the seeds of a sound knowledge of the arts that teach the maintenance of the healthfulness of our whole natures, that knowledge on which *individual* hygiene must be based. For each one has the keeping of his own constitution, both corporeal and mental in his own hands; to him the guardianship of this precious charge is mainly entrusted, whatever modifying influences social institutions may supply. Here, in a man's own mind, should be placed, then, the fount of instruction from which the peaceful and harmonious actions of life must flow."

In the manual before us, Mr. Davis has presented a very fair exposition of the leading facts connected with the science, the importance of which he enforces with so much truth in the foregoing sentences.

In his observations upon food and drinks, he has avoided most of those errors into which the preceding British writers upon Hygiene were so generally led from incorrect views of the physiology of the human body, and an entire neglect of the lessons of daily experience.

The work of Mr. Davis may be safely recommended to the attention of the unprofessional reader, for whose use it is mainly composed. On more than one point we certainly differ from the opinions advanced by the author, but those are neither so important nor prominent as to impair, in our estimation, the value of the leading doctrines inculcated by him. D. F. C.

ART. XVII. *Treatise on the Radical Cure of Hernia by instruments, embracing an analysis of the mechanical properties of the various trusses now in use, a description of the new instruments invented by the author, and general directions to patients for the safe employment of these instruments, with hints to surgeons in their application, &c.; with numerous illustrations.* By HEBER CHASE, M. D., Philadelphia, 1836. 1 vol. 8vo, pp. 195.

This treatise may be considered as an exposition of the experience, now very considerable, of its author, in the treatment of *hernia*, and presents many points of great interest and utility. It is said with truth, by him, that much of the management of hernia has passed from the hands of the profession to those of the patients and other unscientific persons, who are but too frequently more influenced by a desire to make money than to sustain reputation. With a view to correct the evils of such a state of things, Dr. Chase has composed the work before us.

The arrangement of it is good, and well suited to the object in view. The first chapter is applied to the anatomical description of hernia, in its numerous points of occurrence. The second chapter treats of the symptoms of the disease in its various stages, and the third of the means of reduction by taxis, and so on.

Chapter the 4th is devoted to an analysis of the mode of action of trusses in retaining hernia, and as a consequence of that inquiry, contains also a description of the more common forms of such instruments, and especially such as are most approved of at present by their general adoption in this country. After that, we are furnished with an account of the progress and present state of improvement in the construction of wooden truss-blocks. It is there stated, that as Mr. Stagner and Dr. Hood had obtained patents for their trusses, the author, Dr. Chase, purchased rights in them, to avoid legal difficulties, and from this cause his name and that of Dr. Hood were associated at a former period, but that he now considers the instruments recommended in this work to be so essentially different, that they can be no longer regarded as modifications of the first. The vindications of this claim of originality are too much in detail to be introduced in the present bibliograph, but are well worthy of the pages of a critical review.

The chapter on the *modus operandi* of instruments, in producing the radical cure of hernia, is well worthy of attentive perusal; it is highly ingenious and argumentative, and perhaps not the less so for the reason that there is really in professional records a deplorable deficiency of positive observations on the successive stages and ultimate state of parts which have been relieved from hernial protrusions.

Chapter 9th, treats of the cases and results obtained by the use of Dr. Chase's truss, and from the experience there exhibited, holds out a strong ground of hope that the profession is now furnished with an instrument of very decided and, at least, extensive utility. W. E. H.

ART. XVIII. *Medicina Externa Morborum Internorum, sive Methodi Jatraleptica et Endermatica Expositio Historica, Physiologica et Therapeutica, nec non utriusque Comparatio.* Auctore CAROLO JOSEPHO VAN COOTH, Med. Stud. Trajecti ad Rhenum, 1834. 8vo. pp. 317.

External remedies in Internal Diseases; or a Historical, Physiological, and Therapeutical Exposition of the Iatraleptic and Endermic Methods of Treatment, with a comparison between them. By C. J. VAN COOTH. Utrecht, 1834.

In 1831, the Medical Faculty of the University of Utrecht offered a premium for the best exposition, founded upon anatomico-physiological principles and well established facts, of the actual value of external medication in the treatment of internal diseases; which premium was awarded on the 26th of March, 1832, to the essay before us.

Although the production of a student of medicine, and exclusively compiled from the writings of others, it nevertheless presents much higher claims to our notice than the ordinary class of prize essays—comprising a valuable collection of facts, methodically arranged, in relation to a subject which has elicited too little attention from the profession in this country.

The work is divided into five chapters.

The first contains a historical account of the employment of external remedies.

The second embraces an investigation into the anatomico-physiological principles upon which the employment of external remedies is based, and their effects upon the internal organs are explained.

The third treats of the Iatraleptic method, or the application of remedial agents to different parts of the surface of the body, the cuticle remaining entire.

The fourth contains an exposition of the endermic method, or the application of medicines to portions of the surface denuded of the cuticle.

The fifth presents a comparison between these two methods. The whole being followed by sixteen corollaries which the author conceives are legitimately deducible from the facts set forth in the essay.

M. Van Cooth is a very decided advocate for external medication, under particular circumstances of disease, either as a substitute for, or as an auxiliary to the ordinary treatment by internal remedies. His view of the subject is, upon the whole, however, extremely judicious and fully sustained by the facts which he has adduced. With him we fully concur in opinion, that, by the judicious physician, the application of remedial agents to the surface of the body may often be resorted to with advantage as a means of fulfilling important indications, whenever, as is frequently the case, he is precluded from administering the appropriate remedies by the mouth.

In a general consideration of external remedies for the cure of internal maladies would be necessarily included, not only such as produce, when applied to the surface, effects similar to those which result from the same articles, when introduced into the stomach, but, also, such as produce simply a stimulant or sedative impression upon the exterior of the body, and in this manner indirectly concur in relieving the internal organs and tissues from disease, as for instance friction, bathing, rubefacients, blisters, setons, issues, moxas, &c. It is only the former class, however, which constitute the subject of the present essay.

The fact that certain articles of the materia medica, when applied, under particular circumstances, to the sound skin, are more or less readily absorbed and carried into the circulation, so as to produce upon the several tissues and organs precisely the same remedial effects as result from their administration in the usual manner, by the mouth, is now well established by numerous observations, of the accuracy of which we have no reason to doubt. This is amply shown in the work before us.

The number of remedies which are capable of being thus applied in the treatment of diseases, is nevertheless extremely limited—while the effects produced by even the most energetic of these are comparatively trifling, and attended always with a good deal of uncertainty. Consequently, the application of remedial agents to the sound skin is only adapted to the treatment of a few diseases of a strictly chronic character. M. Van Cooth, it is true, places upon this method a higher estimate than we conceive it merits; he admits, however, its very great inferiority to that in which the remedies are brought, by the removal of the cuticle, in immediate contact with the true skin.

When remedial agents are applied to a surface denuded of its cuticle, or endermically, as it is termed, their absorption takes place with far more promptness, than when they are applied, under any circumstances, to the sound skin. In this manner, also, a much larger number may be employed, and their desired effects are more certainly obtained. Consequently, endermic medication, as our author properly remarks, is adapted to the treatment of a more extensive class of diseases than the Iatraleptic method, and capable of fulfilling more pressing and important indications. The latter can never be depended upon for the speedy removal of any urgent symptom, while the former often may with a good deal of certainty.

The following list is given by M. Van Cooth, as the remedies which when used endermically have been shown to produce the same effects precisely as when they are introduced into the stomach:—Peruvian bark and its extracts, sulphuret and muriat of quinia, assafœtida, musk, opium, acetat, sulphat and muriat of morphia, strychnia, belladonna, stramonium, saffron, corrosive sublimate, calomel, Kermes mineral, emetic tartar, emetine, aloes, gamboge, rhubarb, jalap, elaterium, croton oil, squill, digitalis.

The diseases in which the endermic method of treatment has been successfully employed, are intermittent and malignant fevers, chronic bronchitis, phthisis and other affections of the chest; tetanus, neuralgia, rheumatism, gout, paralysis, paralytic aphonia, amaurosis, spasmodic dysphagia, delirium tremens, hysteria, odontalgia, vomiting, strangury, &c.

Notwithstanding the author of the present essay has been led, very naturally, to place the advantages of external medication in as favourable a point of view as possible, he is far from recommending it as a substitute for the usual plan of treating internal diseases, in any case in which the latter can with propriety be resorted to. Thus, he very properly remarks, that "in cases in which the internal exhibition of remedies is neither impeded nor counter indicated, their administration by the mouth is always to be preferred to their use externally." In a few instances, however, external medication may be employed in conjunction with the ordinary plan of treatment, as an important auxiliary.

The circumstances under which, in the opinion of M. Van Cooth, either the Iatraleptic or endermic methods of treatment will be found useful, are the following:—

When we are unable to introduce our remedies into the stomach, either in consequence of a tetanic closure of the jaws, dysphagia, spasmodic constriction, or mechanical obstruction of the œsophagus; in cases of extreme prostration, or of profound stupor; during a state of fainting, delirium, convulsions, or mania, or when the stomach is labouring under great irritability.

When, from idiosyncracy, the patient is affected in a peculiar and distressing manner by the internal exhibition of certain remedies, by their application to the surface, those effects may often be prevented, and the desired operation obtained.

Patients, occasionally, refuse to take medicines by the mouth, either from uncontrollable disgust or from prejudice—in such cases their external use may be resorted to with the happiest effects.

External medication is recommended by Hufeland and others as peculiarly applicable to the cases of infants and young children, from the extreme difficulty so generally experienced in administering remedies to such patients by the mouth, as well as from the deleterious effects these not unfrequently produce upon the delicate coats of their stomachs.

It also, occasionally, happens, from the morbid condition of the alimentary canal or other organs, that remedial agents cannot, with propriety, or without producing injurious symptoms, be administered internally, but may be safely and beneficially applied externally. Thus, it is remarked by Christien and Brera, that digitalis, when applied to the skin, acts most effectually in the removal of dropsies, and without affecting the pulse, and hence may be prescribed in this manner when it could not without danger be given by the mouth. Corrosive sublimate, likewise, in many cases cannot be introduced into the stomach even in the smallest doses, without giving rise to considerable irritation of the alimentary canal, extending thence to the lungs, while from its external use it is said that no such effects result. Squill, opium, bark, quinia, various purgatives, and other remedies may, in like manner, be employed endermically, when their internal use would be of doubtful propriety, or absolutely forbidden.

External medication may, likewise, be frequently resorted to with benefit to assist the operation of internal remedies, when the latter fail to produce the desired effects, or when it is desirable to fulfil promptly two distinct indications.

Finally, when all other modes of treatment have failed in the cure of disease, external medication has been known to succeed.

According to M. Van Cooth, external medication is contraindicated in all cases attended with an inflammatory diathesis; in all affections arising from excessive irritation and spasm of the absorbents or from irritation of the extreme vessels. In those diseases which are neither sthenic nor urgent, but in which the activity of the absorbent system and digestive canal continues; and, finally, in old persons and those of a rigid, dry, and torpid constitution, in whom there exists a torpor of the absorbent system.

The endermic method is in particular contraindicated in extremely irritable patients, who are unable to endure the pain which follows the application of remedies to the denuded skin; in acute and sthenic diseases, and in cases of excessive corpulency, pregnancy, or great general debility.

The application of medicines to the surface in the treatment of internal diseases, especially after the endermic method, is unquestionably deserving of a more extensive trial than has yet been given to it. The facts which have been already established in relation to its efficacy, under circumstances of peculiar emergency, prove it to be an important auxiliary to our ordinary plans of treatment. Many important particulars connected with it remain, however, to be still elicited by further observations.

Notwithstanding it has been shown that all remedies which have to be administered in large doses, or in which the active principles are combined with a considerable amount of inert matter, together with such as are productive of considerable irritation to the part to which they are applied are unadapted to endermic medication, yet we are still unacquainted with the entire list of remedial agents that are capable of being thus employed—as well as with the particular form

under which, when applied to the skin, their curative effects are most certainly obtained. The directions, in regard to the latter particular, presented in the work before us, are chiefly copied from the very excellent Essay on Endermic Medication, by Dr. Gerhard of this city, originally published in the North American Medical and Surgical Journal for April and July, 1830—to which essay ample credit is given by M. Van Cooth; from its pages, the fourth chapter of the work before us is, in fact, chiefly compiled. D. F. C.

ART. XIX. *A Treatise on Consumption, embracing an Inquiry into the Influence exerted upon it by Journeys, Voyages, and Changes of Climate; with Directions for the Consumptive visiting the South of Europe, and remarks upon its Climate. Adapted for General Readers.* By WILLIAM SWEETSER, M. D., &c. 8vo. pp. 254. Boston, 1836.

Whatever opinion may be entertained as to the propriety of medical treatises prepared for the use of general readers, there cannot, we conceive, be any very valid objections urged against such as are intended merely to point out in a popular manner, the causes of dangerous and prevailing maladies—to disabuse the public mind of fatal errors in regard to their distinctive characters, and to indicate the means best adapted for their prevention, so far as it regards an attention to diet, regimen, and such other particulars as it is in the power of those individuals liable to, or threatened with an attack, to control.

It is true that a work, of even this character, may be productive of much more injury than good, unless it be prepared with great judgment and caution; so difficult is it to convey accurate information on subjects connected with medicine to those who are unacquainted with anatomy and physiology as well as the general principles of pathology.—By such, from even the plainest and most cautiously written treatise, extremely erroneous impressions are apt to be derived. Hence arises the objections which are urged against all works of this kind, and which have very generally deterred those from undertaking them, who are the best qualified for the task by their education, talents, and experience.

If a popular medical treatise is ever calculated to produce beneficial results, it would certainly appear to be one that shall fully instruct the public in regard to the persons who are most predisposed to attacks of pulmonary consumption; the circumstances under which it usually occurs; the history of its premonitory symptoms, and the most certain means for warding off its attacks, whether in relation to a change in the dwellings, occupations, and mode of life of the individuals, or their speedy removal to a more favourable climate.

Insidious in its commencement, while it is almost invariably and often rapidly fatal, when once the disease has been roused into action, experience nevertheless teaches us that much may be done, in the early stages of consumption, to at least preserve it in a latent state, and thus prolong the life, comfort, and usefulness of the patient. Unfortunately, this is too often prevented, in consequence of that period being allowed, through ignorance, to elapse during which alone either remedial or prophylactic treatment is of much avail. The lungs being allowed to become disorganized, death is inevitable.

It is with the view of enlightening the public in relation to this important subject, that the treatise before us is professedly written.

"The special designs of the present work," remarks the author, "are to make known the causes of, and best means of preventing the fatal malady under consideration, that those unfortunate individuals, especially, who bear in their physical organization its indications, or those who are their guardians in early life, may be apprized of their danger, and thus induced to a reasonable resort to those

preventive measures which have been most effective in raising the energies of the system, and repressing its diseased tendencies. That the premonitory or threatening signs of the disease may also awaken an early solicitude, and incite to a timely application for medical aid, and to communicate some little information on the question relating to sea voyages and warm climates in consumption, which is often so momentous to the sick, and so embarrassing to friends."

The work commences with a brief and general history of consumption, and the climates in which it is most prevalent, its relative mortality, &c.: next is introduced "a general view of the lungs and their functions." After which are considered, the pathology of the disease; the physical characters indicating a tendency to consumption; its relative prevalence in the two sexes, and the ages during which it is most frequent. "A concise account of hæmoptysis, or bleeding from the lungs," follows. Then "the causes of consumption, and their means of prevention, so far as known," are examined. The history of the symptoms, is next presented. Then "an account of the diet and regimen best adapted to the premonitory and declared state of the malady." And lastly, "the influence exercised by sea voyages and change of climate on the disease," is particularly considered, together with the period and circumstances in which these means will be likely to exert a beneficial agency; and some necessary directions are given in regard to them.

"I am not aware," says Dr. S. "that any work precisely of the character designated is now before the public; and whether such a one is wanted, and if so, whether the present will answer such want, the public must decide. I cannot, however, but indulge the hope that I may be able to impart some instruction to that numerous class of individuals who seem marked for the victims of consumption, and may tend either to prevent its developement, repress it in the beginning of its course, or, if no more, smooth the destined passage to the grave."

How far the work before us will fulfil the desirable objects proposed by its publication, will admit of some dispute. This much, however, we are prepared to say, that it is as well adapted to this end, as any work of the kind can be. In relation to every thing which the author has advanced concerning the subjects of which he treats, he is borne out fully by the experience and observations of the most experienced and authoritative physicians: we have indeed seldom read a popular treatise upon any medical subject in which fewer errors occur, or in which a larger amount of valuable information is so happily condensed.

D. F. C.

ART. XX. *A Memoir of James Jackson, M. D., with extracts from his letters to his father; and Medical cases, collected by him.*—By JAMES JACKSON, M. D., Professor of the Theory and Practice of Physic in Harvard University; and Physician of the Massachusetts General Hospital. Boston, 1835.*

This memoir is one which has interested the profession in many respects. It is a tribute of affection from a father to the memory of a talented and most promising son. It shows us the vivid impression produced upon the ardent mind of youth, by a scientific tour throughout those portions of Europe in which the Medical sciences are cultivated most successfully; and it indicates the proper course to be followed by those members of our profession who would wish to pursue them in the true philosophical spirit. To the entire correctness of a parent's portrait, none can bear more unequivocal testimony than the author of this notice, who looked upon the subject of the memoir as one of his nearest friends and most talented fellow students at the instructive school of Pathology afforded by the Parisian hospitals. His loss was not confined to the imme-

* An apology seems due for the late period at which this notice appears. A short review of the memoir was prepared as soon as the work reached Philadelphia. But from some circumstance, it was thought doubtful whether a notice of a work which had never been published would have been agreeable to the author: and the intention to do so was, therefore, for the time, relinquished; but is now resumed, in consequence of the work being reviewed in one of our cotemporaries.

diate circle of his friends; it extended its effects to the Medical public: a considerable mass of facts he had already collected, and it was his intention to have added largely to their number; but what was still more essential to the profession, the mind of Dr. Jackson had been already disciplined to accurate habits of study, and he was thoroughly prepared to cultivate with success the arduous pursuits of his science. A favourable position at Boston was very soon secured for him, and time only was wanting for the completion of some of those researches into which he had entered with so much zeal.

James Jackson, Jr., left Boston in the spring of 1831, and returned in the summer of 1833. About six months of this period was spent in the British Islands, but the remainder of his time was devoted to a course of study at Paris. His principal object in visiting Europe, was to acquire a correct knowledge of the various methods of investigating disease, and a facility in their practical application. These views were greatly promoted by an acquaintance which he formed while at Paris, with some of the most eminent pathologists, more especially Louis and Andral. He afterwards prosecuted his studies under the direction of Dr. Louis, and devoted himself for some time to the observation of disease at La Pitié, one of the largest Parisian hospitals. At that hospital he collected a large mass of materials for future comparison with such cases as he might observe in America. These cases were full of details, and were noted with the greatest care, at an immense sacrifice of time and labour; they are, therefore, in themselves so valuable, that we cannot help regretting that they are not numerous enough to form the basis of a separate publication.

At the return of Dr. Jackson to America, he recommenced his studies, and examined with great attention the symptoms and pathological anatomy of an epidemic of typhus fever which prevailed at Boston in the winter of 1833–4. He found that the glands of Peyer were uniformly diseased, and offered the same anatomical lesions as they do in the dothinenteritis which is so prevalent at Paris, and is admirably described by Louis and Chomel. At last he contracted the fever himself, and suffered most severely; he recovered, however, and was on the point of entering into practice, when a return of severe diarrhœa, to which he had been subject at Paris, obliged him to relinquish his intentions. A slight amelioration of his symptoms gave his friends great hopes of recovery, but as if he were the destined victim of death, he had not left his bed, when he was attacked by a mortal inflammation of the pericardium.

Although that portion of the work which consists of the materials collected at Paris, is necessarily limited to cases and letters written by him to his father, it contains much interesting matter. The letters give a lively picture of the objects which most interested him at Paris; the interesting cases of disease brought into the hospitals, and the constant and laborious efforts which he made to verify by his personal observation, every new fact which was presented to him in the lectures or the writings of the French pathologists. Another fruitful source of instruction was derived from the familiar conversations on scientific subjects into which he had so frequently entered with the French hospital physicians, especially with Dr. Louis, who is always ready to communicate his knowledge to such pupils as may take a due degree of interest in medical science. These conversations are often alluded to, and when peculiarly interesting, were related in his letters. It is a mode of instruction which is more peculiarly French than any other, and when derived from accurate sources, is perhaps the most valuable.

The cases are less interesting to most readers than the letters, but are useful models of accurately observed facts, and make us regret more deeply that he was not permitted to continue the life of laborious investigation which he had commenced under such happy auspices. Facts of this kind must at last be regarded as the only sure basis of medical science, and sooner or later the value of this mode of research will be appreciated.

The memoir which forms the introduction to this work, does equal honour to Professor Jackson as a physician and as a parent. It is written in the most correct taste, there is no exaggeration of feeling, and no undue praise of his gifted son. It is a just tribute to the memory of one who was beloved as a man, and respected as a youthful member of the profession, already well known by his labours, and affording the best grounded hopes of future eminence. A painful reflection, which is scarcely alluded to in the memoir, arises from the fact, that Dr. Jackson fell a victim to his ardour in the pursuit of professional knowledge. The first link in the chain of disease was formed at Paris, the affection of the bowels, which was the indirect cause of his death, was contracted there, and was neglected that no moment might be lost at a time when his occupations were all-absorbing. But for this mistaken view, we should not now lament the early loss of one of the most promising of American physicians.

W. W. G.

ART. XXI. *Diatribe in Diæteticam Veterum, maxime in Auli Cornelii Celsi præcepta diætetica, Hippocratis et Galeni placitis illustrata. Auctore* CAROLUS JOSEPHUS VAN COOTH. Trajecti ad Rhenum, 1835. 8vo. pp. 148.

A Dissertation upon ancient dietetics, especially the dietetic precepts of Celsus, with illustrations from the Maxims of Hippocrates and Galen; submitted to the Medical Faculty of the University of Utrecht, for the degree of Doctor in Medicine. By C. J. VAN COOTH. Utrecht, 1835.

The above title conveys but an imperfect idea of the work to which it is affixed. This embraces not only a dissertation upon the dietetic precepts of Celsus, preceded by a notice of his life and doctrines, but also a historical account of the food, meals, dietetic precepts, laws, and customs of the ancients—more particularly the Greeks and Romans.

Every portion of the work displays the learning and research of the author, and the historical part, especially, is replete with curious and interesting information as to the opinions which were entertained and the regulations that were enforced by the priests, philosophers, legislators, and physicians of antiquity in reference to a subject of the very first importance, not only to the members of the medical profession, but to society at large.

Erudite, however, and interesting as this dissertation of M. Van Cooth unquestionably is, it can lay but slight claim to any thing like practical utility.

The general precepts and experience recorded by the earlier writers in relation to dietetics, are in accordance with those of every subsequent age, and perfectly familiar to every well instructed physician. The pernicious effects of excess in eating and drinking, on the one hand, and of deficient and unwholesome food on the other—the necessity of abstinence in disease and the fact that the well-being of the body and the mind is promoted by a plain and moderate diet were as well known and as fully pointed out by the ancients as by the moderns. But, when we enter into details, the errors and prejudices of the former are so numerous and important as to destroy entirely the value of their dietetic rules. Indeed, upon every department of dietetics, whether considered in its application to the treatment of diseases, or to the promotion of the health, vigour and longevity of man, much important light has been thrown, by facts and physiological principles, for the establishment of which we are indebted to very recent observers.

Had the same amount of industry, as is displayed in the work under notice, been employed in collecting and arranging the materials for a treatise on *modern dietetics*, the result we are persuaded would have been equally creditable to the author, and in every point of view far more acceptable to the profession into which the performance was intended to induct him.

D. F. C.

QUARTERLY PERISCOPE.

FOREIGN INTELLIGENCE.

ANATOMY.

1. *Of the nerves supplying the cavernous structure of the Penis, and their connexion with the hypogastric plexus of the sympathetic.* By Professor MUELLER, of Berlin.—After I had discovered the fact that the arteriæ helicinæ—the branches of the arteria profunda penis producing erection—were different from those branches of the same vessel which served for nutrition (see this Journal, November, 1835, p. 179,) I put to myself the question, whether the nerves of the penis were of the same or different properties, whether they belong to the system of nerves of animal life alone, or whether they also included organic fibres? Do those nerves upon which the sexual gratification depends, differ in their nature from those which produce the accumulation of blood in the corpora cavernosa?

I have been so fortunate as to find, both in man and the horse, that the nerves of the cavernous bodies are made up both of branches proceeding from the organic as well as the animal system, whilst the nerves of animal life alone provide the nerves of sensation of the penis.

Since, by the discovery of the arteriæ helicinæ in the corpora cavernosa penis, the immediate source of erection is found to be in these bodies themselves, so will it be also proved, if such a connexion exists between the nervus sympathicus and the nervi cavernosi, that the sympathicus performs the principal part in the phenomenon of erection. I have observed that by far the greatest number of the nerves which penetrate the corpora cavernosa in man, derive as considerable fibres from the organic as from the animal nervous system, and that the same takes place throughout the nerves supplying at least the posterior half of the corpora cavernosa of the horse, whilst the anterior half is supplied only by nerves arising from the animal system, and entering anteriorly to the pubes—viz. the branches of the nervus pudendus, given off whilst passing along the dorsum of the penis. Therefore the posterior nerves, which penetrate the corpora cavernosa behind, and enter the symphysis pubis, are composed as well of branches of the nervus sympathicus, proceeding from its plexus hypogastricus, as of the branches which come from the nervus pudendus communis.

Upon the side of the urinary bladder in the horse, and proceeding towards its neck, are many fine twigs of the plexus hypogastricus, which often join one another on their way, and separate again, forming a net work. In this part of the plexus hypogastricus, upon the side of the middle and anterior part of the bladder, lie several small ganglions, separated from one another, more or less, but often by a considerable space; they measure from one-half to two or three lines in diameter. From these ganglions, twigs pass into the urinary bladder, by which

means the gray nervous fibres destined for the corpora cavernosa pass from the hypogastric plexus thither, and they then unite again in the same reticulated manner. Before these nerves arrive at the posterior surface of the pubes, they unite in the neighbourhood of the neck of the bladder with branches of the nervus pudendus. Through this anastomosis are formed many strong nerves—the *posterior cavernous nerves;* it is of these alone that I now treat.

Many of the nerves formed in this manner, of which, in the instance now before me, I reckon four large and two smaller, pass under and behind the symphysis pubis, and penetrate the corpora cavernosa, in part accompanying the arteria profunda penis, and partly in other places.

I remark particularly, that neither the posterior cavernous nerves, nor the anterior branches of the nervus dorsalis penis, form any swellings in their passage through the fibrous coat of the corpora cavernosa. In man, a much greater portion of the cavernous nerves are in connexion with the hypogastric plexus, and the number of twigs which come from the nervus dorsalis penis *alone*, is much smaller than in the horse. Hitherto, only the cavernous twigs of the nervus dorsalis have been known.

The demonstration of this communication in the horse is so easy, that the principal points may be clearly made out in a few weeks; but the preparation of those of the cavernous nerves, which anastomose with the hypogastric plexus in man, requires an extraordinary degree of patience, and a satisfactory demonstration of them, together with the hypogastric plexus, can only be perfected in the course of some months. The larger of these cavernous nerves can be found easily before and under the symphysis pubis, after these bones have been very carefully cut away; but the difficulty is, to demonstrate their connexion with the plexus hypogastricus.

In the summer of 1834, I was following out the twigs given to the penis by the nervus dorsalis, which I, as well as other anatomists, thought were the only nerves this organ received, and by this means I discovered, upon the root of the penis, a considerable number of gray nervous fibres, which passed forwards in a kind of lace-work between the vasa dorsalia from the right and left side, in order to unite themselves almost immediately to the branches of the nervi dorsalis; some, however, pierced the root of the penis directly. As I prosecuted the dissection of these gray fibres backwards, I was quite astonished to find that the stems did not arise from the nervus dorsalis, but were continued in a diverging direction backwards to the sides of the commencement of the prostate gland, and underneath the venus plexus situated here—one of these nerves is especially strong in this place. Before the prostate gland, these nerves are continued in a weak and still finer plexus of organic fibres, which partly lies concealed in the fleshy coats of the pars membranacea urethræ, and in part passes backwards between the prostate and the M. levator ani. This plexus stands also in connexion with branches of the nervus pudendus, within the fleshy coat of the membranous portion of the urethra; but the greatest number of the twigs of this plexus belong to the organic nervous system.

These, then, are continued (divided into many filaments) backwards between the side of the prostate and the levator ani; still hanging together in a plexus, and passing upon the side of the bladder, where the fibres are very fine and soft, until they at length reach the plexus hypogastricus, with which they unite.

Close behind the prostate, and by the side of the cervical portion of the bladder, there are in these plexuses, many ganglions, some longish and some more rounded (ganglia pudenda seu prostatico-vesicalia); to which, also, may be traced some fine filaments from the third or fourth sacral nerves. These ganglions cannot well be considered to belong to the hypogastric plexus, since they are widely separated, and are only connected with it by long and weak filaments. From these ganglions, twigs pass into the neck of the bladder and the prostate gland; but the greater number pass forwards to form the cavernous plexus. The preparation of the nerves in question will be conducted best in the following manner:—first, the cavernous nerves must be sought after upon the root of the penis, in that part where the greater number of them sink into the corpora cavernosa, that is, immediately before and under the symphysis pubis. Some gray nerves may be very soon found before the symphysis, and lying between the dorsal vein and arteries; these are to be followed backwards after the root of the penis has been

separated from the pubes, which must then be sawed away—*this must be done very carefully.* When the stems of the cavernous nerves are arrived at, they must be followed through the fibrous mass which envelopes the venous plexus, underneath and behind the symphysis, until they reach the commencement of the prostate, where they begin to subdivide still finer, and form the plexus which has been already described. It will be advantageous to allow the preparation to macerate for some time in spirit, as, by this means, the fine nerves will be more easily distinguished from the surrounding parts. Now, before the most difficult part of the dissection, it will be better to commence the plexus hypogastricus, so that the plexus of the cavernous nerves may be prepared from behind forwards. The preparation of this union is very difficult, and requires the greatest patience; for although the connecting filaments between these two plexuses are numerous, they are very fine and weak.

The nervi cavernosi, consisting of many fine branches, and one large one, will then be found to spring from the plexus cavernosus, which is composed of the roots proceeding from the nervus pudendus on the one hand, and the plexus hypogastricus on the other, and which lies partly between the levator ani and the prostate, and partly in the fleshy coat of the membraneous portion of the urethra, but is strongest on the anterior part of the prostate gland. All these stand in connexion with one another, and pass partly under the symphysis ossium pubis, partly immediately before it into the corpora cavernosa; sometimes accompanying the arteria profunda penis, but sometimes through peculiar passages in the fibrous envelope. Some twigs unite with the nervus dorsalis itself, others with the cavernous nerves of the opposite side, and others again with branches of the nervus dorsalis of the other side, and by these means a plexus is formed which accompanies the vasa dorsalia, and from this also twigs proceed, which, penetrating the fibrous coat, range in the corpora cavernosa. Some of the filaments of the plexus cavernosus on the other hand, uniting with twigs of the nervus dorsalis, pass over the corpora cavernosa, and descending into the furrows formed by the two roots of these bodies and the corpora cavernosa urethræ, are distributed into the last named body.

The nervi dorsales penis are, in distinction to all these nerves, quite white; they pass on the side of the arteriæ dorsalis forwards, and send many, for the most part fine, twigs into the corpora cavernosa. Their anastomosis in the middle line, through communicating branches, occurs generally in such a manner that filaments proceeding from the plexus cavernosus participate in forming it. By far the greatest number of the branches of the nervi dorsales are destined for the glans; a small number only is distributed to the integuments and prepuce. Upon *these* it is that the sensation of the parts depends.—*London Med. Gaz. 23d April*, 1836.

—

2. *Complete transposition of the viscera.*—Our original department contains an interesting example of this, communicated by our friend, Dr. J. M. Warren, of Boston. A similar case has been recorded by H. Snowden, Esq. in a recent No. of the *Lond. Med. Gaz.* (June 11, 1836.) The subject of this last case was a young man aged 15, who died of tuberculous disease of various organs. In the thoracic cavity, the heart and the two-lobed lung were on the right side; the three-lobed lung on the left. In the abdomen, the liver with its gall-bladder, occupied the left hypochondriac region, stretching into the epigastrium; the spleen and the great *cul-de-sac* of the stomach were in the right hypochondrium; the œsophagus, passing downwards from the pharynx, inclined to the right side; the first portion of the duodenum ascended from right to left—the third portion, passing across the spine, terminated in the jejunum on the right side of the second lumbar vertebra; the iliocolic valve was placed in the left iliac fossa—the sigmoid flexure of the colon in the right; the greater extremity of the pancreas was towards the left side.

The same uniformity of transposition was observed in the vascular system. As the heart was on the right side of the thorax, so its axis inclined to the same side; the ventricle, which is usually termed right, or anterior, was on the left side, and posterior, occupying the situation of the aortic ventricle, which was to the right, and anterior; the aorta, after its origin, inclined to the left side, but opposite the second cartilage of the ribs, turned from left to right, and continued its course downwards on the right side of the spinal column; the usual number of

vessels arose from the arch; the arteria innominata passed to the left side; the vena cava ascendens was on the left side of the spine.

In conformity with the altered position of the large trunks, the distribution of the various branches passing to and from the viscera was changed relatively; the recurrent branch of the pneumogastric nerve was given off on the right side round the arch of the aorta, on the left round the subclavian artery. In fine, the most perfect adaptation was observed throughout.

PHYSIOLOGY.

3. ***On the Causes of the Motion of the Blood in the Capillary Vessels.*** By Dr. POISEUILLE.—When the globules of the blood in the capillaries of the mammiferæ are examined, they are found to possess different velocities, even in the same vessel. Some of them have two simultaneous motions—one of rotation, the other of translation; while others remain motionless for a time. Two globules, presenting at first the same velocity, only preserve by accident the distance which separates them, and, if the motion be such as to permit us to follow the same globule, we can observe it sometimes in the same capillary vessel presenting these different phases of motion. The velocity of the globules in the capillaries is less than in the arteries and veins; it is seldom greater. This remark extends also to a capillary vessel which rises immediately from an artery, or which proceeds directly into a venous trunk. These different phenomena lead to the conclusion that the globules are endued with a spontaneous motion, or, rather, that the cause of the flow of blood through the capillaries is different from the cause which regulates the motion of the blood in the large vessels.

Dr. Poiseuille has endeavoured to examine with great attention the causes of the motion of the blood in those parts of vessels which have been isolated from the action of the heart by means of ligatures, or separated from the body by cutting instruments, and then to study the influence of the heart and arteries upon the capillary circulation.

He has established, by a great number of experiments, that the calibre which the arteries and veins present, proceeds from the pressure of the liquid which they contain; that their coats are constantly distended by the blood which they receive; that these vessels tend to collapse suddenly, in consequence of the elasticity of their coats, as soon as the cause of their dilatation is removed.

The large arteries and veins, as well as the small ones, possess this property; but, besides, the diameter of the last gradually diminishes when they cease to receive blood. This retraction is sometimes so great, that the mysenteric vessels of the frog, salamander, young rats and mice, are reduced to two-thirds of their original diameter. He has also ascertained that, *cæteris paribus*, this reaction is more decided in the arteries than in the veins. These facts being known, it is easy to determine the motions of the blood in parts which have been separated from the trunk either by ligature or by a cutting instrument—motions which even yet are designated by the title of circulation.

In fact, an attentive examination of this pretended circulation shows us, that the part being in a horizontal plane, the motion of the globules in the capillaries is totally at an end; that all the vessels, arteries, and veins, carry the blood from the extremities to the amputated surface; that this motion, becoming more and more slow, ceases after the expiration of some time, and at the same time the organ presents a much smaller quantity of blood. These motions result, then, simply from the approximation of the coats of the vessels towards their axis; they necessarily, therefore, drive the blood towards their open extremities. The tail of the frog, the foot of the same animal, the mysentery of very young rats, of young mice, separated from the trunk by a cutting instrument, have presented constantly the same phenomena. This pressure which he has established with regard to the blood of animals, exists also in the liquids of vegetables; he also believes that this kind of circulation, which may be observed in the stipula of the *Ficus elastica*, detached from the trunk, is due to the same cause.

The action of gravity, as well as that of heat, are also causes, but confined

within more narrow limits of the motion of the globules in parts separated from the trunk, especially when the blood has not yet coagulated in the vessels.

Numerous experiments made, 1st, upon the heads of the salamander and frog, animals in which the circulation is, as it were, suspended at pleasure, show that it is established gradually from the centre to the circumference; 2nd, upon the foot of the frog, dividing the crural vessels; 3d, upon the mesentery of the frog and salamander, by cutting the heart; 4th, upon the mesentery of young rats and mice. All these experiments, of which several are confirmed by those of the two celebrated physiologists, Haller and Spallanzani, have convinced Dr. Poiseuille that the heart and elasticity of the arterial coats are the *sole agents* in the capillary circulation in question.

In resting upon the preceding facts, that is to say, the action of the heart and arteries, and the tendency which the latter have to collapse when they are not sufficiently dilated by the tide of blood projected from the heart, the constant *jerking*, *intermittent*, and *oscillatory* circulation, which precede the death of an animal, are easily explained; the cause of the *retrograde circulation* presented by the arteries after the death of the animal and that of the heart is similar.

Having cleared up these points, the author passes on to the examination of the causes of the irregular motions of the globules which he has observed in the capillary vessels.

If we study the course of the blood in the arteries and veins of the frog, of very young rats and of young mice, we observe, in proceeding from the axis of the vessel to the coats, that the velocity of the globules is totally different. In the centre, their velocity is at a maximum; it diminishes gradually as we approach the coats. In the immediate neighbourhood of the coats, a very transparent space can be observed, which is generally occupied by serum; this space is equal to about the 1-8th or 1-10th of the diameter of the vessel. This transparent part of the vessels observed by Haller and Spallanzani as being occupied by serum, has been again noted by Blainville.

Since some of the globules, rubbing against each other, are projected into this transparent part of the vessels, the globules placed in the middle possess a very slow motion, and they cease to move when they are almost in contact with the coats of the vessel. The globules which are nearest to this transparent part have a double motion of rotation and translation; they roll, if the expression may be used, over this part of the serum.

From these observations, the author concludes that the interior of the vessels is lined with a layer of serum at rest. Since this layer is immovable in its immediate contact with the coats of the vessels, every time that a globule is placed there it will be at rest, or rather, its velocity will be more or less diminished, according to the portion of the globule immersed in it. Now, in the capillaries the globules move between two layers of serum. Hence, their motion ought to be less rapid than in the large vessels, since they require to overcome the inertia of this layer.

If a globule is partly in the layer, this portion of the globule will be at rest, while its remainder, placed in the axis of the vessel, will acquire a certain velocity; then the globule will move round its own axis, in order to acquire its normal velocity in following the centre of the vessel. If of two globules, one is placed in advance of the other in the layer, the former will pursue its course, and the latter will be delayed, and the motions described will be presented.

The labours of M. Girard upon the flow of liquids in tubes of small diameter have established, in most tubes susceptible of being softened by the liquid moving in them, the existence of a similar layer. The author passed through tubes of very small diameter, liquids holding in suspension opaque bodies; and, having examined this current by a microscope, he found this layer immovable, and of a thickness much smaller than that obtained by the calculations of Girard.

Hence, the author concludes, that the blood transported by the vessels of the heart to all parts of the body does not impinge against the coats; that a layer of serum, by its state of rest, guards the coats from any such effects. Besides, we can conceive the importance of this immovable layer of serum lining the coats of the vessels in the act of nutrition, since the recent experiments of Müller of Berlin have demonstrated, that the fibrin is held in solution by the serum.

Dr. Poiseuille has farther studied the influence of cold and heat upon this layer

of serum. The following experiment shows the result. At the temperature of 77°, he examined the circulation in the foot of a frog, and, in the vessel where the foot was placed, he deposited pieces of ice. In the large vessels, the transparent part of the serum obviously increased in thickness; the globules in immediate contact with it moved more slowly; the three orders of vessels, arteries, capillaries, and veins, preserved their diameters sensibly; the velocity in the capillaries was considerably diminished, and in some of these vessels it became insensible; during six or eight minutes, for example, the circulation in the capillaries of the other foot of the frog preserved its normal velocity: and it was not till a quarter of an hour after the submersion of the first foot in the iced water that the velocity of the blood in the second foot, placed in the atmosphere, was diminished, in consequence of the temperature of the whole mass of blood being sunk. The ice in the vessel was replaced by water at the temperature 100°, and the velocity of the globules became then so great, that their form could scarcely be distinguished. In young rats, the cold, applied only for a few minutes, stopped the circulation in the capillaries of the mesentery. It gradually resumed its powers, and acquired its normal rhythm after the ice was withdrawn.

Thus the diminished velocity of the capillary circulation by cold, and its greater rapidity by the action of cold, are naturally interpreted by the increase in the thickness of this layer in the first place, and its diminution in the second.

These results completely correspond with those of M. Girard on the variation in the thickness of the layer which lines the coats of inert tubes, when the temperature increases or diminishes.

We know that certain animals, such as fishes, and some amphibious mammalia, are sometimes immersed nearly 262½ feet (80 metres) beneath the surface of the water, and then support a pressure of from seven to eight atmospheres. It is important, therefore, to know how this layer acts, and at the same time to observe the modifications of the capillary circulation under such pressure. With this object in view, the author has constructed an apparatus, to which he has given the name of *Porte-objet pneumatique*. A short description will afford an idea of it, and develope the results which may be derived from its use. It consists of a strong box of copper; the top and bottom are formed of crystal, fitted into grooves placed in the sides. One of the extremities of this box carries a copper tube, which contains sometimes a barometer tube, and sometimes a manometer for compressed air; the other extremity presents a large opening by which the animals are introduced. To this extremity sometimes a suction pump is adapted, and sometimes a forcing pump. The animal, prepared in such a way as to allow the capillary circulation to be seen, is placed in the instrument, and the apparatus placed under the microscope. We can then observe the modifications which may introduce in the capillary circulation a more or less considerable pressure. In salamanders, frogs, tadpoles, young rats and mice, the arterial, venous, and capillary circulation have not presented any remarkable change, even when raising the pressure rapidly to 2, 3, 4, 6, and 8 atmospheres, and reciprocally. Farther, the circulation has continued to preserve the same rhythm even under a pressure of some centimètres (39 inches) in salamanders, frogs, and tadpoles. On placing in the apparatus very young rats and mice (it is well known that the mammalia, during the first days of their birth, may remain some hours without breathing) the circulation can be seen perfectly, *in vacuo*. How absurd, then, is the opinion of these philosophers who consider that, without atmospheric pressure, circulation cannot go on; but atmospheric pressure, combined with the motions of respiration, are accessory causes of the flow of the blood, as Dr. Poiseuille has shown in another memoir.

From these experiments, he infers, that the thickness of the layer of serum, the existence of which is due to the affinity subsisting between the coats of the vessels and the serum, a thickness which varies so remarkably from heat and cold, is independent of surrounding pressure, that the contractions of the heart preserve their normal rhythm, whatever the pressure is.

Several tubes of *chara*, placed in this apparatus, had presented, under a pressure varying from 209 (7·8 inches) to 600 centimètres (23·6 inches) the same modes of circulation; and the motions of some infusorii contained in the water of the chara, such as *vorticelli*, *potiferæ*, &c., were executed with the same facility as under the influence of the atmosphere.—***Records of General Science*** from ***Bib. Univ.*** *for November*, 1835.

4. *Observations and experiments upon the function of the Cæcum.*—By Dr. Schultz, Professor of Physiology in the University of Berlin. The objects of the learned Professor in making his experiments were to ascertain; 1, the function of the Cœcum: 2, the digestibility of the different articles of food: 3, the manner of the dissolution of the fleshy fibres in the stomach, according to microscopical observations: 4, the degree of acidity in the stomach and cœcum: 5, the degree of alkalescence of the food in the stomachs of ruminating animals: 6, the nature of the acids in the stomach: 7, the coagulation of milk by the saliva, stomach, &c.: 8, the saliva: 9, the nature of the bile.

He maintains that there are two digestions, one in the stomach, the other in the cœcum, and that the latter is more especially active when vegetable food has been ingested. From the first experiment he learned that the degree of acidity in the cœcum is not always the same, that it is not always present, and that the food may even become alkalescent. From the second, that this acidity was neutralized by long fasting, and thus allowed pure bile to enter the cœcum and neutralize its contents. From the third, that there is always bile in the course of the small intestines. From the fourth and fifth, that all the bile secreted by the liver during fasting, is by no means contained in the gall bladder, and that that part is very small compared with the large quantity that flows into the intestine during the empty state of the stomach. From the sixth, that though bile is always flowing, it never passes the cœcal valve during fasting, but collects on the upper side of it; it is only after perfect acidification, and at the beginning of the peristaltic motion of the intestines, that this bile flows into the cœcum. From the seventh, eighth, and ninth, that the degree of acidity and alkalescence of various parts of the digestive canal, vary with the length of time that has passed after feeding, and the degree of perfection of the gastric digestion, as also with the length of time which animals have fasted before feeding. From the tenth, that the quantity of digestible matter which is contained in the food has a great influence upon the degree of acidity in the cœcum. From the eleventh, that in carnivorous animals, when the cœcum and colon are but little developed, the food is for the most part digested by the stomach and small intestines, and the acidity in the cœcum is in general very weak, since the food, when it is here collected, contains little or no digestible matter.

The general results from the whole of the experiments we give in the author's own words; they are of the highest interest and importance.

"*Results of the experiments upon the cæcal digestion.*—It may, therefore, be gathered from my observations and experiments, that the food in the *cæcum* becomes not only a second time sour, but that the acid chyme is there neutralized by the access of bile, in the same way as in the *duodenum;* so that after the employing of the intestines very different reactions may be produced according to pleasure. On account of this twofold consumption of bile in the stomach and cœcum, there is an antagonism between the two digestions; for when the bile is consumed by the digestion in the stomach, the cœcal digestion cannot be perfected, and, on the other hand, when the bile flows into the cœcum, the neutralization of the acidity in the duodenum cannot take place. In those animals in which the cœcal digestion is most perfectly developed, this antagonism appears to be so arranged, that each digestion has its particular period of action, so that when the one is in action, the other is either lessened or at rest. In ruminating animals, it is very evident that the gastric digestion takes place more particularly during the day, and the cœcal at night, so that I think the gastric may very properly be called the diurnal, and the cœcal, nocturnal digestion.

"In carnivorous animals, however, the cœcum is so little developed, that the stomach alone furnishes nearly the whole process of digestion. These animals, therefore, have a preponderating diurnal digestion. This agrees with the fact, that carnivorous animals rest for the most part during the day, and at night become hungry, and seek their prey, and are, therefore, nocturnal animals, since their digestion takes place during the day.

"As the formation of the feces follows the perfected cœcal digestion, herbivorous animals are accustomed to discharge the greatest quantities in the morning and evening, and but very little during the day, and the healthy course of digestion. There appears to be something similar to this in man, in those ages where the cœcal digestion is most developed; in childhood, on the contrary, when the

digestive apparatus resembles that of carnivorous animals, repeated discharges of excrement take place at indefinite periods of time.

"*The use of the valvula cæci in cæcal digestion.*—That the cæcal digestion may take place, it is necessary that the still digestible remains of the food should be rendered acid and changed into chyme, as in the stomach, before its mixture with the bile. This could not happen if the bile flowed continually into the cæcum, and it is therefore probable, that its opening into the small intestines is closed during chymification, as the stomach is closed during its digestion, only with the difference which the different state of the matter required. The stomach is closed during digestion at the pyloric orifice, to prevent the egress of the food, and the cæcum at its iliac opening, to prevent the ingress of the bile. This is my view of the use of the valvula cæci. I have not only found in general at the lower end of the *ileum*, an alkaline reaction, while the upper is still either sour or neutral, but at certain periods of digestion, a collection of pure bile at the iliac orifice of the cæcum. The contents of the cæcum are at this time nevertheless sour. This would be impossible if the mouth of the cæcum were not closed during chymification. After the collection of the food, therefore, in the cæcum, its opening, like that of the bladder, uterus and stomach, appears to be strongly contracted by its muscular fibres, and with the help of the valvula cæci, to be perfectly closed. The contrary is the case at the beginning of the peristaltic motion of the cæcum, and upon the opening of its iliac orifice the collected bile flows in. This agrees with the sensation of the ceasing of the peristaltic motion after the collection of the food in the cæcum, which I observed upon myself, and have described in my work (*de Alimentorum Concoctione Experimenta Nova.*) It appears to me, therefore, that the generally admitted explanation of Fallopius, according to which, the use of the valvula cæci is to prevent the return of the food from the cæcum into the *ileum*, is quite unfounded; for it may be easily seen that during excretion this backward motion is very possible.

"*Concerning the times for eating corresponding to the periods of digestion.*—The simple rule to eat as often as one is hungry, appears no doubt the most natural. I shall be able, however, to show that this rule is by no means universal, and in many instances even pernicious. I shall succeed best if I prove that one is often hungry without having the least real need of food, and that this hunger is better allayed by fasting than by eating.

"Hunger is the feeling of need of the nourishing parts of the blood, and is situated in that organ through which it is satisfied—the stomach. This appears to be the reason, why, when the stomach is empty, we hunger, and not when it is full, even when it is filled with perfectly indigestible matter, which cannot satisfy the true feeling of hunger. We cannot judge from hunger whether the food be digested, and the proper source of hunger satisfied; and, therefore, this feeling cannot be the only rule for eating, since a perfect and undisturbed digestion is necessary for the true allaying of hunger, and, therefore, when digestion would be disturbed thereby, it would be improper to eat, notwithstanding hunger may be felt.

"If we consider under this point of view the antagonism between the gastric and cæcal digestion, it follows, that, if both be excited at the same time, they will reciprocally disturb each other, and that for perfect digestion, and the proper formation of the blood, they must take place at different periods of time. My experiments show that, for the completion of the cæcal digestion, the bile flows through the small intestine into the cæcum, and the whole intestine becomes thereby more or less alkaline; but they also show, that if, during the cæcal digestion, the stomach be put in action, the flowing of the bile to the cæcum is stopped, and its digestion consequently hindered, since the chyme cannot be neutralized, and all the contents of the canal as far as the excrement become sour. The formation of the blood in the lower parts of the canal is hereby disturbed, and the gastric digestion is also rendered imperfect; so that the two digestions cannot take place in their integrity at one and the same time. The completion, therefore, is indispensably necessary to perfect digestion in general, and it becomes very important so to regulate the periods for eating, that the activity of the stomach may not disturb the digestion in the cæcum.

"If now, the cæcal digestion be considered more particularly as a noctural digestion, the meals should be so regulated, that, when this begins, the stomach

may no more be put into action, or at least not overfilled. It is generally admitted that a man digests a moderate meal within three or four hours. My experiments, however, upon carnivorous animals, which digest much more quickly than the omnivorous, to which class man belongs, show, that six or seven hours are requisite for the digestion of a moderate meal, and that when dogs are allowed to eat as much meat as they will, twelve to fourteen hours are hardly sufficient for perfect digestion. The animals must even then be allowed to rest, for if they are made to exert themselves, the digestion is still further delayed, at least half the time longer. The observations which I made upon myself during intermittent fever agree with this fact, and it may safely be assumed, that six hours are necessary for perfect digestion, that is, till all sour chyme has disappeared from the stomach. If now it be admitted, that, in the common mode of life, the noctural digestion begins about from seven to eight o'clock in the evening, the last meal ought to be taken so early, that by this time it may be for the most part digested in the stomach. In general, therefore, one should not eat after four o'clock in the afternoon, and evening meals should be altogether avoided: for, in proportion to the lateness of the hour and the quantity eaten in the evening, the more will the cœcal, and therefore also the gastric digestion, be disturbed, seeing that both must take place nearly at the same time.

"That this rule is not so applicable in youth (as long as the gastric digestion resembles that of carnivorous animals, and for the most part finishes the process of digestion alone,) as in riper years, follows from what has been already observed.

"The more the digestion is disturbed by continued large and late evening meals, the less perfect will be the preparation of the blood, and the more will the need of its nourishing parts, or hunger, be felt, particularly in the evening when the stomach is empty. This is the reason why those people who should eat least in the evening are most hungry at this time, and here more particularly does the feeling of hunger not correspond with the period of digestion; for the more such people eat in the evening, the more imperfect is their sanguification, and the greater the consequent hunger, since the food goes almost entirely unchanged through the alimentary canal, and the nourishment it contains is lost to the body. The only means, therefore, by which this hunger may be properly appeased, is that by which the digestion may be restored, and sanguification amended, and that is, notwithstanding hunger, to abstain from food in the evening, that the gastric and cœcal digestions may not reciprocally disturb each other.

"The source of hunger will ever increase, by continually appeasing it by late evening meals, and in this way, therefore, it is as easy to starve from too much eating as from fasting: and no doubt in this way has many a person eaten himself to death, and most probably will still. We find in general that the meagerest and most sickly persons are the greatest eaters, and, on the contrary, the well-nourished and powerful eat less. That in the different condition of the digestive organs of different people, and according to the quantity of food which is taken during the day, there may be various changes and exceptions to this general rule, is self-evident. Where the youthful condition of the digestive organs is still vigorous, and the cœcum not as yet much developed, it is not necessary to be so particular about the smallness of the evening meals; and where there is in general but little taken during the day, and the quantity of food in the cœcum, therefore, small, more may be eaten in the evening, as there still remains a quantity of bile sufficient for the perfection of the cœcal digestion. The longer the fasting after meals, the more bile can flow into the cœcum after the ending of the gastric digestion, and the less fear need there be of evil consequences."—*London Medical and Surgical Journal, October* 31, 1835.

—

5. *On the Free-Martin.*—When a cow brings forth two calves, one a bull calf, the other to appearance a cow; the cow-calf is usually unfit for propagation and is called a *free-martin.* John Hunter has published some interesting observations on this subject, and given an account of the examination of three animals of this description. (Observations on the animal economy.) Dr. Allnatt has recently examined a free-martin and gives the following as the result of his observations:—

"*Vagina* impervious, terminating in a cul de sac, which was curiously elongated at the extremity, connecting it with the uterus.

Uterus exceedingly small; a mere blind vermiform continuation of the vagina.

Vesiculæ seminales impervious; the extremities exhibiting a peculiar *epididymoid* structure.

Distinct traces of impervious Fallopian tubes, which were lost immediately above the fundus uteri.

Vasa deferentia pervious; but, instead of traversing to form the epididymis, terminating in a small prostate.

Meatus urinarius opened by a small curiously formed orifice *laterally*, and not by a direct continuation with the sulcus urinarius.

In connexion with the last mentioned fact, it was observed that the animal, during life, contorted its body into a most extraordinary emprosthotonic curvature, during the time of voiding its urine, and seemed perfectly incapable of performing the operation in its natural horizontal position."

The assertion of Mr. Hunter, that the free-martin *never* exhibits sexual propensities, is contradicted by Dr. Allnatt.

"A clergyman of great respectability," says Mr. A., "with whom I lately conversed upon the subject, informed me that he had bred a free-martin upon his estate, which had not only shown the natural desire for the male, but had actually admitted him—of course ineffectually; and I saw but yesterday, working in harness, a true, apparently female, adult free-martin, belonging to William Toovey, Esq. of Newnham, Oxfordshire, which occasionally manifests its male propensities in a most intelligible way. This gentleman informed me, that when the cows, amongst which this martin is kept, exhibit their natural fitness for the male, this creature, unlike the spayed heifer, or common ox, is at that period peculiarly on the alert, and has been observed to leap the cows in perfect resemblance of the entire bull.* A gentleman also of this neighbourhood had a true free-martin killed, a short time since, which had taken the bull several times, but had never propagated: after death, scarcely a vestige of the uterus could be discovered."—*London Med. Gazette*, July 2, 1836.

---

6. *Spontaneity of movement in the fluids of living bodies.*—Professor Wm. P. Alison has been for some time past endeavoring to form an estimate of the degree of evidence which may be adduced in favor of the physiological principle, to which some of the German physiologists give the name of spontaneity of movement; i. e. the evidence in favour of the proposition, that there exists in living bodies a principle of movement affecting their fluids, or the fluids in contact with them, which is peculiar to their living state, but independent of the contractions of any of their living solids, and which he has designated as consisting in vital attractions and repulsions.

It is a matter of essential importance to medical science, to have this point fairly decided; because if such principles of motion exist in living bodies, its alterations must certainly be the fundamental change in the production of the most frequent and formidable diseases. If such a principle exist, it must be in the capillary vessels of the higher animals, that it must chiefly operate; and it is generally agreed at the present day, that it is there that the most important diseases, whether general or local, originate; the disorders of the heart, and of the larger organs of circulation, which occur in disease, being generally subsequent to, and apparently consequent upon, changes in the state of the circulation in the small capillaries, either general or local.

Dr. A. thinks that a great variety of evidence may be fairly stated in proof of the existence of the principle in question, although there is certainly still room for careful scrutiny of the facts that have been thought to indicate it. Two branches of the inquiry Dr. A. considers as particularly deserving of attention. 1st, Whether the phenomena of inflammation can be explained, on the supposition that the only strictly vital powers moving the blood are the contractions of

*This animal, in voiding its urine, strangely contorted its body, and was incapable of maintaining a continuous uninterrupted stream; but the fluid was emitted in a divided current at intervals, *per saltum*, and in small quantities at each jet.

the heart and blood-vessels, and other living solids; and 2nd, Whether the phenomena of respiration, and particularly the leading fact of the acceleration of the movement of the blood through the lungs, which is caused by exposure to oxygen there, can be explained on that supposition. Dr. A. thinks that the result of his experiments, taken in connexion with the facts already known, are nearly sufficient to entitle us to answer the question in the negative.

We have in a preceding No., (XXXV. p. 201) given a notice of the experiments of Dr. A. on the subjects just referred to, taken from the reports of the proceedings of the British Association; but as Dr. A. complains that these reports contain inaccuracies seriously affecting his meaning, we shall give the account he has furnished of them to our respected cotemporary, the *Edinburg Medical and Surgical Journal*, (January, 1836.)

—

7. *Additional observations on the vital properties of Arteries leading to inflamed parts.* By W. P. Alison, M. D.—It may be remembered that the uniform result of the observations on this subject which I had the honour to communicate to the Association last year* was, that the vital power of tonic contraction in arteries, to which Dr. Parry gave the name of tonicity,—which acts in all cases when a living artery is emptied of blood,—which determines the degree of contraction observed in arteries for some hours after death,—and which is the only vital power, ascertained by unequivocal experiment to exist in the arterial coats,—is found to be *diminished*, in all the vessels leading to an inflamed part, of a size admitting of actual measurement; and, taking these observations in connexion with those made with the microscope on the minute vessels of inflamed parts themselves, it may be laid down as a general fact, that all the vessels concerned in any local inflammation, are in a state of *relaxation and distension*, as compared with their natural condition.

It is correctly stated in the Report of the Transactions of this section, that a subsequent experiment was made by Dr. Fletcher, Mr. Dick and myself, in a different mode, but leading to the same conclusion. That experiment was made on portions of the axillary arteries of a horse, in which inflammation had existed for three weeks in one of the fore-legs; the violence of the original inflammation, produced by an injury, had abated; but a blister had been applied three days before death, by which fresh inflammation had been excited. Bent tubes and stop-cocks were used in the manner practised by Poisseulle to try the contractile power of the vessels.† Two portions of the axillary arteries, each eleven lines long, were successively fastened between two bent tubes, and distended with water, by the pressure of a column of mercury of about ten inches, introduced into one tube, and then allowed to react on the water distending them, so as to raise the level of a column of water, in the other tube, to a degree which could be accurately measured. The result was, that the reaction of the artery of the sound limb raised its level by sixteen lines, and that of the artery of the inflamed limb raised it only by ten lines. But as this experiment was made on an animal already dead twelve hours, it might reasonably be said, that it afforded a measure of the elasticity only, not of the peculiar vital power, of the arteries examined.

In a subsequent experiment made on the 28th July last, in which I had not only the able assistance of Mr. Dick, but likewise of Dr. Allen Thomson, Dr. J. Reid, and Dr. Spittal, a horse was bled to death, on account of a violent inflammation, attended with much pain and swelling, of eight days standing, in the knee-joint of one of his fore legs; and portions of the two axillary and humeral arteries, precisely corresponding to one another, and about 2½ inches in length, were examined as soon as they could be taken from the body. The artery of the diseased limb, when taken out of the body, in this as in all the other cases, was decidedly the largest, measuring at the larger extremity of the portion taken, 12-8 of an inch in circumference, and at the smaller ⅞; while the circumference of the artery of the sound limb at the corresponding points was 11-8 and ⅞ only. The trial of the strength of the arteries by their reaction on water distending them was made in two ways;—*First*, the second limb of the tube was filled up with water, and the space occupied by the quantity expelled on the contraction of the artery was

† See fourth Report of British Association, p. 764, and Vol. XVII. p. 183 of this Journal.
† See Magendie's Journal de Physiologie, tome viii.

measured. The artery of the sound limb was found to expel just .5 inch of water; that of the diseased limb .35 inch only. *Secondly*, what appeared to be the more accurate mode, the water was made to fill the second tube only to a given point, and the rise of its level, on the expulsion of that contained in the distended portion of artery, was accurately measured, and amounted to 1.75 inch in the case of the artery of the sound limb; and to 1.25 inch only in the case of that of the inflamed limb. The column of mercury used to effect the distension was exactly the same in all the trials.

Another observation was made with much care and accuracy, by Dr. Spittal, on the relative circumference of these portions of arteries at this time, and again after a lapse of about twenty-eight hours, when the *post mortem* contractions dependent on the last exertions of their tonicity were over. The artery of the sound limb was then found to have dilated itself again from 33-24, to 41-24;—while the artery of the inflamed limb had dilated itself only from 36-24 to 42-24, at the corresponding point; so that the difference between the artery in its contracted state immediately on death, and in its dilated and perfectly dead state was 8-24 or ⅓ in the sound limb, and only 6-24 or ¼ in the inflamed limb; and in other parts of the arteries it was obvious, that the difference of calibre between the vessel in its contracted state immediately after death, and its subsequently dilated state, (which is the measure of the last exertion of its tonic power of contraction,) was considerably less in the inflamed than in the sound limb; the vessels approaching more to equality of calibre at the second examination.

It appears, therefore, as the uniform result of all the modes of examination which we have been able to devise, that the arteries of inflamed parts, examined at different parts of their course, and at various periods of the inflammation, and when they are pulsating apparently with unusual force, are in fact *relaxed* or *weakened* arteries; transmitting, in consequence of their weakened condition, the impulse given by the heart, with less modification than it receives in passing through the arteries of sound parts; but themselves exerting a less power of contraction on the blood, than they do in the sound state.

This being ascertained, the question immediately presents itself, whether this weakened state of the vessels is an adequate cause for all the changes, as to the movement of the blood, which take place in the inflamed state, *i. e.* whether inflammation consists simply in a weakened action of vessels. I formerly mentioned one striking fact, on which I think there can be no doubt, as sufficient to indicate that this question must be answered in the negative,—viz. that two distinct and nearly opposite changes are ascertained to take place in the movement of the blood through an inflamed part,—a retarded movement in the vessels most immediately concerned, and an accelerated movement and greatly increased transmission, in all the surrounding vessels.

I shall take the liberty of adding one or two other considerations, in confirmation of the opinion, that this diminution of the contractile power of the arteries, although the only change perceptible in their mode of action, is quite inadequate to explain the simplest and most essential phenomena of inflammation.

1. If we suppose inflammation to consist only in an altered action of vessels, and this alteration to be of the kind which these observations indicate, we make no attempt to explain the difference between inflammation, with effusion of lymph, and simple determination or congestion of blood, where no unusual product issues from the vessels. Now this appearance of the peculiar *products* of inflammation, exuding from the vessels, is what the pathologist regards as most truly characteristic of the inflamed state; and I believe it to be certain, that in the usual effusions, consequent on healthy inflammation, the fibrin is both in much larger quantity, and shows a *greater attraction of aggregation*, than in any effusions from uninflamed vessels. Of this we have a familiar example in the case of the lungs, which we often find not only infiltrated with effused serum, but so far condensed by congestion of blood, as to be impervious to air, and not crepitate when cut, without being so far increased in density as to sink in water; but so far as I have observed, whenever we see the granulations of decolorized lymph in the air cells, truly characteristic of inflammatory effusion, then we are certain of seeing this decisive proof of the increased density of the lungs.

2. If we suppose inflammation to consist merely in that relaxed condition of the vessels which is indicated by these observations, we must suppose the usual

causes of inflammation, e. g. mechanical injury, to produce, very rapidly, in all the vessels adjoining and approaching to the part to which they are applied, this state of relaxation or weakness, and to be effectual in exciting inflammation, only inasmuch as they diminish the vital power of those vessels. Now this depressing or sedative effect on vital power is not only just the reverse of the effect produced by such agents on other living parts, whether irritable or sensible, but is just the reverse of the effect produced by such agents on arteries themselves, when they are applied in such a manner as directly and exclusively to irritate their coats; as in the experiments of Verschuir, Dr. Thomson, Dr. Hastings, Wedemeyer, and others, where the contractile power of arteries was decidedly excited by irritation, their calibre in consequence *lessened*, and the transmission of blood through them *impeded*.

The more that this subject is considered, the more distinctly, as I think, must it be perceived, that the only way to escape from these various difficulties is to suppose, that the causes which excite inflammation do so by really exciting or increasing a vital action, but not an action of the nature of contraction; that the idea of the vessels of inflamed parts taking on an increased action is a delusion; that what is truly excited is an action not *of the vessels* but *within the vessels* of the part affected; that it is an increased exertion of powers by which the blood is moved, or its motion influenced, in the capillaries, but which powers are inherent in the blood itself, dependent on, or influenced by, its relation to the surrounding textures, but independent of any contractions of living solids; and the increased exertion of which powers leads always to distension, and to more or less diminution of the tonic power of contraction, of the vessels, within which it takes place.

—

8. *Experiments illustrating the immediate cause of death in Asphyxia.*—By W. P. Alison, M. D.—The experiments on this subject which I am to relate are so simple, and their result so consonant to former observations, that in order to show them to be in any degree worthy of the attention of the Association, I must enter on a short explanation of the point which they are designed to illustrate.

I take it to be well ascertained, by the experiments of Dr. Williams of Liverpool, and Dr. Kay of Manchester, that in ordinary cases of Asphyxia, the circulation of the blood is brought to a stand, not in consequence of the venous blood penetrating either the nervous or muscular textures of the body, but in consequence of its gradually failing to penetrate the lungs, and not being delivered to the left side of the heart in sufficient quantity to maintain effective actions there.

It appears, therefore, that the admission of air into the lungs in respiration is, in some way or other, a powerful auxiliary cause of the circulation through these organs, and that when that auxiliary power is withdrawn, the contractions of the right side of the heart, although continuing vigorous for some time, soon become ineffectual in propelling the blood through the lungs.

The question immediately presents itself, in what manner do the actions of respiration afford this auxiliary power to the circulation through the lungs?

It may be remembered, that the doctrine of Haller on this subject, prior to the speculations either of Goodwyn or Bichat, was, that the actions of respiration are a merely mechanical auxiliary to the circulation, and that asphyxia depends simply on the blood stagnating in the lungs, in consequence of the suspension of the natural alternate contractions and expansions of their substance. After the theories both of Goodwyn and Bichat had been shown to be erroneous, it is not surprising that this idea should be revived, and stated in explanation of the death by asphyxia; as has been done in an ingenious article in the Edinburgh Medical and Surgical Journal.

The obvious method of bringing this theory to the test of experiment is to ascertain, whether the gradual stagnation of the blood in the lungs, and in the right side of the heart, takes place equally in an animal asphyxiated by breathing a gas which contains no oxygen—where the mechanical actions of respiration go on even with increased force, although the chemical changes are suspended—as in one where the mechanical part of the process is suppressed by hanging or drowning.

It is stated by several physiologists, and particularly by Mr. Broughton, that in animals asphyxiated by breathing azote, the right side of the heart is found distended with blood, and contractile, and the left side nearly empty and motionless,

as in other cases of asphyxia. But to this observation it may be objected, that the animals were allowed to lie in the azote until they became insensible, and it was only some minutes thereafter that their chests were opened; and that as the actions of respiration would necessarily become slow and imperfect, and then cease entirely (whether from the presence of venous blood or the deficiency of arterial in the brain, we need not inquire,) some time before the examination was made, the impediment to the circulation, supposed to be consequent on the suspension of the mechanical acts of respiration, would have time to show itself.

I therefore thought that, in order to decide this point satisfactorily, it would be necessary to have an animal confined in azote, not until it became insensible, but only until its respiration became laboured; and then taken out and immediately killed, in the manner most likely to arrest its circulation instantaneously, so as to give us an opportunity of judging, whether the blood in this case fails to make its way through the capillaries of the lungs, even while the mechanical actions of respiration are going on with full force.

With the assistance of my friend, Dr. J. Reid, I therefore performed the following experiment repeatedly.

A rabbit was confined under a bell glass in azote, until its breathing became obviously laboured, not more frequent than usual, (in fact, generally less frequent, the respiration of that animal, especially when it is at all frightened, being very rapid,) but distinctly fuller, longer, and more forcible. The bell glass was then removed as quickly as possible, and the animal instantly struck on the head, with such force as to crush the brain and *medulla oblongata* completely. It never appeared to inspire after that injury, but was always strongly and generally convulsed. As soon as the convulsion was over, the chest was opened, and the state of the heart and great vessels examined. We were rather surprised to find, that, notwithstanding the extent and violence of the injury of the brain, the right side of the heart was never completely stilled, although its contractions were feeble and quivering, and obviously ineffectual for maintaining the circulation. The movement of the blood towards the right side of the heart by the great veins likewise always continued to a certain degree; but in these respects the appearances were the same as in comparative trials on animals in the natural state.

What was essentially important was the observation made in all the animals which had been confined in azote, and also in one which had been confined in a small quantity of air, until its breathing had become hurried and laboured, viz. That the right side of the heart was always found, from the time it could be brought into view, distended with blood, and the left side comparatively empty. The quantity of blood got by puncturing the pulmonary artery and pressing the right side of the heart, was from five to ten times as much as could be obtained in the same way from the left side—a difference greater than is sometimes observed in an animal that has been hanged. The right side of the heart, as already stated, was always found pulsating feebly, though not maintaining the circulation. The left side of the heart, evidently in consequence of defect of blood in it, was always found motionless; whereas, in one of the observations on an animal breathing naturally, until it was killed in this way, this side was found pulsating, although feebly, for a short time.

I think it evident, from these experiments, that the explanation of the failure of the circulation in Asphyxia, by the suspension of the mechanical process of expansion and contraction of the lungs is erroneous; that the circulation fails equally, and is obstructed at the same spot, although the movements of respiration continue, if oxygen be not inspired; and that *air*, or a gas containing oxygen, is possessed of a peculiar efficacy in promoting the flow of blood through the lungs; and the question immediately recurs on us—in what manner does the air, admitted into contact with the blood at the lungs, promote its flow through their capillaries?

If we suppose the air to effect this purpose by acting as a stimulus to the capillaries of the lungs, we lay ourselves open to two objections which seem quite insurmountable. 1. We suppose the minutest capillaries of the lungs (certainly the vessels which are immediately exposed to the air) to be vessels capable of contraction; whereas the most careful observations on the blood moving on the sides of the air cells of the lungs, leave it very doubtful whether it is there confined within vessels at all, and certainly give no countenance to the supposition,

that the smallest channels or tracks in which it moves are susceptible of vital contraction.* 2. We suppose the effect of the stimulus of the air, acting on these vessels, to be the very reverse of what has been observed in every case where either this or any other stimulus has decidedly acted on a living artery; because in all such cases, and particularly in the experiments of Wedemeyer, where stimulating liquids were introduced into living arteries, and obviously caused constriction of their smaller branches, the effect was, not to promote, but to retard and impede the transmission of their contents.

If again, we suppose the effect of air on the minute arteries in the lungs to be, to cause relaxation or distension, *i. e.* to act as a sedative on them, we attribute to the air, in its action on these vessels, an effect the very reverse of that which is observed, when any other vessel is exposed to that agent; the change observed in such cases (when any change is observed) being always of the nature of tonic contraction.

The conclusion, therefore, appears to me to be nearly inevitable, that the application of air to the blood in the lungs promotes the flow of the blood there, in a manner wholly inexplicable, either by the mechanical process by which the air is applied, or by any influence which the air can exert, on the contractile power of the vessels through which the blood moves. And if this be so, I think the reasonable inference must be, that the motion of the blood through the lungs, in a living and breathing animal, is partly determined by causes which are independent of any impulse, or modification of impulse, by the solids containing the blood.

This inference will be strongly supported, if it shall appear, on farther examination, to be the fact, as seems to me nearly ascertained, that in some of the lower classes of animals and in vegetables, the mutual action of the living fluids and of the air is provided for, by movements of fluids, but independently of any muscular contractions of solids, in the respiratory organs. And I cannot help indulging so far in conjecture as to anticipate, that the important discovery of Purkinje, of the currents visible in the air passages of animals, will be found to support the same inference. For although these currents have been ascribed, both by the German and English physiologists who have observed them, to the vibratory motion of minute *ciliæ*, yet I am strongly inclined, from what I have myself observed of such currents in several other instances to believe, that the movement of the *ciliæ*, although frequently an accompaniment, and perhaps an auxiliary, is not an adequate cause of them; and that their real cause is more accurately expressed by the terms used by a recent French author, who ascribes them to a *jeu d'attraction et repulsion* between the living fluids and the air.

PATHOLOGY.

9. *On Certain Collections in the Alimentary Canal.*—It is a remarkable, though a well established fact, that solid matters sometimes become impacted in the colon, and retain their situation, even after long courses of purgative medicines; the watery evacuations passing over without dislodging the solid cake. Cases of this description often occur where they are not suspected, and they are frequently mistaken for disease of the liver, and maltreated accordingly. The following extract from a paper, by Dr. James Murray, of Dublin, contained in a recent No. (July 30, 1836) of the *Lancet*, presents some interesting examples of such collections.

"1. *Magnesia as an Intestinal Concretion.*—The first case of magnesian concretion on public record, occurred to me in 1812. A child became much distressed by tormina and tenesmus, fulness and tenderness of the abdomen, vomiting, colic pains, frequent watery evacuations, spasms, and nervous twitchings, with febrile exacerbations. Symptoms resembling those of hydrocephalus began to exhibit themselves; Mr. M'Cluney, a respectable surgeon of Belfast, was in attendance with me. After the administration of castor oil, rhubarb, and the hydrarg. cum creta, the child began to pass off large quantities of hard alvine concretions, like peas. Having submitted them to analysis, I found that they consisted of magnesia, enveloped in the mucus of the canal. By the continued use of mild ape-

* See Marshall Hall on the Circulation, pp. 40, 47, and Pl. viii.

rients, and diluted mineral acids, with a few drops of laudanum, this cause of disorder was removed. The nurse had mixed magnesia for a long time in the child's food.

Ten years after this, Mr. Brande published the next case on record, where a concretion of magnesia had accumulated, amounting to three pounds, and was found in the colon after death.

2. *Of Carbonaceous Deposition in the Caput Cœcum of the Colon.*—The next case of alvine concretions, published in Ireland, is that of Mary Cole, of which a short account is given in page 20 of my Essay on "Temperature and Dilution," and which I now beg leave to read: "Mary Cole (Madame Kennedy's nurse) complained of severe pain in the side and abdomen. On examination I found a dull confused fulness and swelling in the hypogastric region. This enlargement moved, and felt painful on pressure. She had been under the care of a surgeon during some months, who had ordered long-continued courses of Epsom salts, so as to keep up a discharge of watery evacuations several weeks. Notwithstanding this repeated purging, I suspected that solid fæces were impacted in some duplicature of the colon, and immediately commenced the use of the jalap soap, combined with mercurial pill. As the severe uneasiness in the swelling prevented repose and kept up continual irritability and febrile anxiety, I ordered the opium soap to be well rubbed into the abdominial tumour every night; the pain soon subsided; a week's perseverance with the new purgative began to bring away hard particles and fragments, which had evidently broken off from a larger mass; and in the end, about two quarts of a substance like broken coals had passed away, embedded in a tough matter-like clay. Instant and permanent recovery ensued."

"Three years after the appearance of my work, Mr. Ferrall—and he was the next Irish practitioner, who did so—published cases of alvine concretions. They appeared in *The Edinburgh Medical and Surgical Journal* for 1831. Dr. Smith has lately adduced others, in a separate publication. I shall now proceed to detail a few other instances of intestinal accumulations, the nuclei of which were detected after long continuance in the bowels. I omit alluding to similar concretions in the lower animals, such as those described by Voight, who gives an instance of an enormous concretion in a horse, the weight of which amounted to 13 pounds. I also avoid the consideration of biliary or hepatic concretions passing into the bowels, so many varieties of which have been described by Morgagni, Gemina, Bezold, Vater, Moriali, Coe, Peterman, Burch, Sloane, Vogel, Van Swieten, Riverius, Fernellius, and, more lately, by Hay, Monro, C. White, Rubini, Unger, Marriere, and others.

3. *A silvered Mercurial Pill, and a Tea-leaf, the Nuclei of Ileo-cæcal Concretions.*—I need not detain you by detailing the particulars of an interesting case, in which I detected a small pasty tumour in the right side of the abdomen. By long and steady perseverance, the collection was brought away, and proved to be composed of two balls. In the centre of one was a tea-leaf, and the nucleus of the other was a mercurial pill, silvered and intact. The patient (a distinguished nobleman) had not taken a single mercurial pill during five years and more. The case is reported at length in *The London Medical and Surgical Journal*, 25th January, 1834.

4. *Concretions accumulating around Fragments of Almonds.*—The following is the statement of a school-master, who suffered from this source of illness from 1806 till March 1809:—"I am not subject to nervous complaints, or much weakness of stomach, but my tongue is foul, and I have a bad taste in my mouth. I can eat, but I do so without relish, and wish for cold water frequently. I have a dull pain in the right side, much increased upon pressure; my bowels are sometimes loose, and sometimes confined. When on my back, in bed, I feel a swelling in the right side, like half a small loaf of bread. The pain has gradually become worse, and now it hurts me when I cough, laugh, take a drive on a car, or use any active motion. I have been treated for liver-complaint, gall-stones and gravel. I repeatedly tried mercury, leeches, blisters, and long-continued purging with aloes, senna, salts, and other medicines, but all failed."

It would be tedious to continue the narrative. Suffice it to say that the use of mild alternative treatment, for about six weeks, exhibiting such aperients as promoted secretion into the canal, and combining them with gums, so as to reach

the part affected before exerting their powers; by the combined use of oil of turpentine and castor oil, by nourishing diet and mild tonics; the condition of the sac improved, the conglomeration became more liquid and broken down, and at last passed away in fragments, each containing *a nucleus of half-chewed almonds*, as perfect as on the day they were swallowed, which he knew to have been nearly four years before.

5. *Concretions, the Nuclei of which were pieces of Radishes.*—In 1819, Miss D. had suffered during six years from a so-called liver-complaint. She had been mercurialized and salivated until all her teeth were removed, and her health was broken and undermined. Being consulted, I found that the tumid condition of the right side extended lower and deeper than when the liver is enlarged. The irregular state of the bowels, the scanty and offensive motions, the nausea, and the twisting pains of the intestines, with many other symptoms, indicated a mass of fæcal matter in the blind gut.

The long-continued use of tonics and frictions, a change of air, the employment of enemata, and the occasional exhibition of castor oil and turpentine emulsions, at last broke down the collection, which came away in solid cakes, composed of waxy substance, agglutinated, *in concentric circles*, around fragments of half-masticated *radishes*, which she had suddenly swallowed several years before. It is remarkable that the vegetable was as perfect as when first eaten, and the colouring matter of the rind as fresh as when the radishes were growing.

When this enormous mass was removed, the recovery was almost instantaneous; her strength and appetite returned, and all the conditions of health were speedily re-established.

6. *A Pomegranate Kernel, the Nucleus of an Alvine Concretion.*—A married lady had endured a series of distressing symptoms for many years past; pain of the right side, lassitude, depression of spirits, cardialgia, and irregularity of the bowels, with exceeding irritability of the nerves. This lady had tried every medicine and every climate in vain. Being consulted, I satisfied myself, after the most careful examination of the swelling, that it was a tumour, fixed down in the right side of the iliac region, separated from the liver, for which it had been mistaken, and from all the circumstances, that it must be contained in the cœcum. I commenced the use of restorative diet; tonic medicines, with the *hydrag. c. creta;* occasional oily emulsions, and enemata, frictions, and gentle exercise. After six weeks' patient and determined perseverance, the cohesive masses began to break up and come away, and in the centre of a hard substance, like putty, was found the nucleus, *a pomegranate kernel*, which the lady had swallowed FOURTEEN YEARS BEFORE! As in other cases, instantaneous restoration to health followed the removal of this tedious source of disorder.

7. *Kernels of Nuts, the Nuclei of Concretions.*—An admirable and excellent lady had long been tortured by colic-pains, weakness, loss of appetite, dull pain of the right side, bad taste of mouth, confusion of ideas, and head-ache. When this train of ailments had continued some time, she became a martyr to cancer of the uterus. During the treatment of that disease, a course of mild aperient medicine was administered, by which the intestinal secretions were improved, and many hard balls, as large as apples, came away, each containing in its centre a part of the kernels of nuts, which she had hastily swallowed *five years previous* to their dislodgement from the bowels. The uterine disease at last proved fatal.

Numerous other cases might be adduced where collections had formed around pips and skins of fruit, stones of grapes and cherries, and the husks of grain, meal, &c.; but I will only allude to that of a young lady, attended by Mr. Commins, Inspector-General of Army-Hospitals; Mr. Basker, of Great Britain Street, and myself. The disease presented, at first, many symptoms of chronic congestion of the head, and even of effusion into the ventricles of the brain,—head-ache, dilated pupils, lethargic apathy, hot skin, quick pulse, and constipation; there was fulness of the iliac region of the right side, with dull pain on pressure. The *pulv. hydrag. c. creta*, active purgatives, and turpentine emulsions, were resorted to. After some time, quantities of offensive matter, mingled with particles like *broken cinders*, were dislodged, and speedy recovery ensued.

I do not remember whether other writers have noticed the fact, that large accumulations in the caput cœcum occasions piles. I have observed, in many in-

stances, that this effect seems to be produced in two ways; first by retarding the return of blood through the hæmorrhoidal veins; and secondly, by determination to the lower part of the rectum, from the extension of irritation *by continuous sympathy*.

These circumstances led me to the observation, that the congestion and pain of the cœcum itself are more effectually diminished by the repeated application of leeches to the *anus*, than by a direct abstraction of blood over the region of the part affected.

—

10. *Examination of the gases contained in the cavity of the pleura of a person affected with pneumo-hydrothorax.* M. Martin Solon has analyzed the air collected from a patient who died of pneumo-hydrothorax, at the Hôpital Beaujon, 15th October, 1834. This gas had no particular smell or colour; did not inflame when an ignited body was plunged into it, but the ignited body was instantly extinguished thereby. The lime contained in lime water was precipitated by this gas, and the tincture of turnsol was reddened by it. It contained 16 per cent. of carbonic acid gas, and in other respects the results did not essentially differ from those obtained by Dr. John Davy. The analyst was satisfied by experiments that oxygen gas was absorbed, and carbonic acid disengaged. Nitrogen was also obtained. The experiments of Sir Astley Cooper also prove that healthy serous membranes absorb such gases as they come in contact with, but Mr. Solon considers it as established that such membranes do not exhale gases. From the analysis which have been mentioned, we may infer that pneumo-thorax is prejudicial to the patient, as much from the *qualities* of the gaseous collection as from its volume. The volume of substances contained in the pleura-costalis of persons affected with pneumo-thorax, may, by its weight and pressure, cause asphyxia; and Mr. Solon correctly believes that the air ought to be evacuated from the thorax, in our attempts to remove the disease, as has been fully explained in Dr. Davy's case. (*Philos. Trans.* for 1824.) Dr. Davy found the following proportionals of gases contained in the pleura-costalis of his patient: carbonic acid 12.5; nitrogen 85.5; oxygen 2; total 100. Dr. Apjon has also analyzed the gases in a similar case, and found the proportions as follows: carbonic acid 8; oxygen 10; nitrogen 82; total 100.

—

11. *Bronchocele—its causes—singular case.* By W. Addison. Bronchocele is common in Worcestershire, and many cases are witnessed in the district around Malvern. In some females the diseased gland grows to a large size without producing any, or only trifling inconvenience—a little difficulty of breathing in walking up hill. Persons afflicted with this unsightly complaint are chiefly, but not universally, females; in one or two instances I have observed male children born with a decided fulness and enlargement of the thyroid gland. Very few of the common people use any remedy for it.

Bronchocele is not confined to the peasantry, a tendency to the disease often showing itself in young females in the middle and higher classes; these generally have recourse to medical treatment. Iodine given internally, and used externally in the form of ointment, usually reduces the incipient enlargement; it is, however, liable to recur.

It is very difficult to ascertain the causes producing bronchocele. Of twenty-two cases which I examined a few years ago, some lived in situations where the water was hard; others where it was soft; some lived very well, i. e. had animal food daily; others chiefly on potatoes and bacon, the ordinary food of the labouring classes. In a great majority the right lobe of the gland was the largest, and there was no appearance of scrofulous disease. In females of the same family, more than one generally had the disease. Bronchocele almost invariably increases in size, and becomes more troublesome during gestation; and, in many instances, remains, after delivery, permanently of a larger size than before. It has been supposed that the offspring of parents afflicted with this complaint evince more or less deficiency in their intellectual endowments; in one or two of the cases alluded to above, this was the case, but not generally.

Case.—I have the details of a very singular case of this disease in an unmarried female of delicate constitution, aged 37. The gland had been enlarged for fifteen years, and various remedies tried with considerable but temporary relief.

For about two years the breathing had been more or less affected, the respiration being accompanied with a harsh, sonorous, dry râle, and short frequent cough. On the *left side* of the trachea was a firm rounded tumour, and on the *right side* was another less prominent; to the former all the distress, which was occasionally very great, was referred. Great relief was experienced, when the difficulty of breathing came on, by pushing aside the tumour from the trachea by the finger. When the finger was removed, the râle, distress, and cough returned, but, after some time, slowly went off. Through this tumour a seton was passed; leeches and cold lotions were also had recourse to, but debility and loss of appetite slowly increased; and the patient one evening being suddenly seized with difficult respiration, which nothing would relieve, died in about five hours (perfectly sensible to the last moment), apparently of suffocation.

Autopsy.—The appearances, on dissection, were highly interesting. The left portion of the thyroid, through which the seton had passed, and to which the principal attention had been directed, extended from the ramus of the clavicle; the upper edge of the right tumour commenced just below the larynx, and between the tumours the trachea was very much compressed. This tumour on the right side was found to be only the superior portion of a very much enlarged thyroid gland, which extended completely into the chest behind the first rib, and, altogether, as large as two closed fists, four-fifths of it being in the cavity of the chest. It was divided into two portions by a groove or sulcus, in which lay the arteria innominata, pushed outwards towards the clavicle. The common carotid was displaced laterally, nearly two inches from the trachea, and the subclavian artery very much elated above the clavicle and first rib. The par vagum passed over the subclavian artery, but the base of the tumour was engaged in the loop of the ramus recurrens; this loop, instead of being closely in contact with the artery, passed round the bottom of the tumour, which was, at the least, two inches and a half below; consequently, both the par vagum and the recurrent branch were very much stretched and elongated. The nervus vagus was redder than on the other side, but there did not appear any material alteration in its size; the recurrent branch, on the other hand, was smaller, and was almost dissipated in a few minute filamentous threads, which could hardly be traced to the larynx.

I forbear making any remark upon this singular and interesting case. Whether death occurred from mechanical pressure upon the trachea, or from paralysis of the recurrent nerve, or from the joint effect of the two, I do not venture to determine.—*Transactions of the Provincial Med. Association. Vol. IV.*

—

12. *On the chemical characters of the saliva, considered as a means of diagnosis in certain affections of the stomach.* By Dr. A. Donné.—The object of this paper is to show that, by comparing the morbid with the healthy state of the saliva, we may distinguish accurately between inflammatory and non-inflammatory affections of the stomach.

After some preliminary remarks, Dr. Donné endeavours to ascertain the characters of healthy saliva, which was the more necessary to be done, as physiologists are at variance on the subject. According to Magendie the quality of this secretion varies according to the time when the experiment is made. Before and after a meal it is acid, but during mastication alkaline, the acidity sometimes disappearing after the first mouthful of food. According to Tiedemann and Gmelin, the saliva and the mucus of the œsophagus are alkaline in every case, not only in man, but in every case where these fluids exist. M. Donné's notion is the same, for in numerous experiments instituted by him both in man and the lower animals, this fluid was always found alkaline, before, during, and after meals, when the functions of the stomach were properly performed.

Though there is not a perfect agreement between chemists in their different analyses of saliva, they generally attribute its alkalinity to the presence of alkaline lactates and hydrochlorates of soda, and from an examination of the crystals by the microscope, M. Donné is convinced that it contains also hydrochlorate of ammonia from numerous crystals of the form peculiar to this salt being easily recognised. This fact has been already pointed out by M. Raspail. In certain cases the saliva is acid, owing to a peculiar condition of the stomach, which it is M. Donné's object to show is indicated by this state of the concretion. On no occasion has he found the saliva acid when the appetite and digestion were good.

When inflammation of the mucous membrane of the stomach cannot be distinguished from its *saburral* state, by decided characters drawn from the usual symptoms, such as the colour of the tongue, its coating, thirst, pain in the epigastric region, &c. it is clear that in the present state of science there are only two ways of ascertaining the truth, by observing the effects of remedies employed, and by examining the organs after death. Upon these two, medicine may be said almost wholly to depend. In support of this view, he cites the authority of M. Andral, who in his *Clinique Medicale*, has supported this doctrine, and pointed out the difficulty of distinguishing affections of the stomach.

For ascertaining the state of the saliva, M. Donné gives the following directions. Slips of test paper are to be cut an inch and a half long, and three or four lines broad, some coloured blue by tincture of turnsol, others reddened by an acid. The former of course will detect the acidity, the latter the alkalinity of the saliva. One of these papers is to be placed on the tongue of the patient, who must retain it for some time in his mouth, taking care to moisten it. The blue paper being in general more sensible than the red, is in a second affected by the acid if it exists, while, on the contrary, it is advisable to leave the red paper in contact with the tongue for a minute or two, to produce the necessary effect. A more sensible reagent than turnsol may be employed, but the shades of difference are not then so well marked. When the saliva is in a healthy state, the red paper becomes blue, if not it is not changed. This is the first test to be tried. When the saliva is ascertained to have lost its alkaline character, it must be tested with the blue paper, when two things may occur; either the blue paper is not changed, in which case we may conclude that the saliva is neutral, or it becomes red, which marks the acidity of the secretion. In the former instance, the first degree of alteration is manifested, which commonly coincides with some derangement of the digestive functions. M. Donné has seen the saliva pass through all the degrees of acidity from the most feeble to the most decided, and those different degrees of acidity appeared to be most frequently proportioned to the degree of alteration of the stomach.

It may be necessary to observe, that simple contact with the saliva even when not acid, produces some slight alteration of shade in the blue paper referable to moisture. Every one knows that colours have not the same shade when dry as when moist, and a little experience will enable a man to distinguish this slight alteration from that produced by an acid. Besides the red paper will serve as a counter proof.

M. Donné directed his researches to determine whether the saliva alone which was in contact with the tongue was thus modified, that he might ascertain whether the acidity ought to be attributed to the thickened mucus so frequently covering the tongue, rather than to the saliva itself. By placing, however, the test papers in contact with all points of the buccal cavity, under the tongue, and on the internal parietes of the cheek, he found always that it was the saliva that was altered in the cases to which he alludes.

When the tongue of the patient is dry and covered with a black, thickened, parched coat, it is difficult to detect the characters of the saliva, which is, as it were, suppressed, or dried up by evaporation, in proportion as it reaches the mouth. In such cases, by moistening with a little water the slip of paper before placing it on the tongue, the chemical character may be ascertained from the thick and gluey covering of this organ.

By the same process, M. Donné has ascertained the state of the different fluids of the body in health and disease, but his views he reserves for a separate work, which he is preparing for publication.

In support of his doctrine, M. Donné brings forward a selection of eight cases, of which we can merely make room for a short outline. In the first case there was *broncàitis* with symptoms of severe fever, and *acidity of the saliva*. Bloodletting and emollients were tried in vain, and the patient died. On inspection, numerous ulcerations with vivid redness were found in the last portion of the small intestines; the stomach was distended with gas; the mucous membrane dotted, softened, raised like a pulpy mass on the great *cul-de-sac;* in other points the vessels were filled with a fine dark coloured injection. Although the inspection took place only twelve hours after death, a number of very animated animalcules were found in the bile. The second case was one of continued ataxic

fever. *The saliva was acid.* The cerebral substance was injected, there was effusion into the ventricles, and injection and softening of the mucous membrane of the stomach to some extent. The third was one of continued fever, with delirium, stupor, *and acidity of the saliva.* Treated with blood-letting and emollients it proved fatal, and after death the glands of Peyer were found injected and ulcerated, and the mucous membrane of the stomach injected and softened. In the fourth case there was stitch in the side, shivering cough; pleurisy of the left side, pneumonia of the right; nausea suddenly supervening, vomiting, diarrhœa. The treatment was strictly antiphlogistic, and blood was repeatedly abstracted both locally and generally. After death purulent effusion was found in the left pleura; circumscribed hepatization of the superior lobe of the right lung; vivid injection of the stomach; softening and almost complete disorganization of the mucous membrane, &c. There was neither ulceration nor even marked redness in the intestines.

Besides these four cases exhibiting the coincidence of acidity of the saliva with lesion of the stomach, usually attributed to inflammation, M. Donné alludes to one of phlebitis supervening on bleeding from the arm in pneumonia. The saliva, which had remained alkaline in the first part of the disease, suddenly became extremely acid at the same time that phlebitis manifested itself, and continued so till death. The stomach was not found red, but the mucous membrane was considerably thinned and softened in the great *cul-de-sac.*

Having given four cases in which the acidity of the saliva marked disease of the stomach, M. Donné cites four in which the effects of the treatment, and the progress of the disease, were connected with the state of the saliva. Into these it would be needless to enter, the fact being the same in all; as the disease of the stomach increased, the saliva became more and more acid, and when it abated the acidity decreased, till on the disappearance of every morbid symptom the secretion became alkaline again.

To complete the proof of the truth of this doctrine, M. Donné acknowledges that it would be necessary to bring forward cases in which symptoms of a disordered or saburral state of the stomach were attended by an alkaline state of the saliva. He has, however, met with only one case in which the treatment was so directed as to verify his diagnosis, and this case decidedly supports his views.

A curious case is detailed in support of his opinion, that acidity of the saliva depends on disease of the stomach. A girl in a fit of love and despair attempted to poison herself with a glass of *eau de javelle.* Vomiting ensued, the tongue became red and dry, there was little pain in the epigastric region; but the saliva was very acid. As she recovered, the acidity disappeared, the saliva became neutral, and when the cure was completed it was perfectly alkaline.

M. Donné alludes to many other cases in support of his views. When the disease is unaccompanied by gastric inflammation, the saliva remains alkaline; but very frequently diseases, the primary seat of which is at a distance from the stomach, are complicated with gastric symptoms, and then the saliva is invariably affected. To several cases of this kind M. Donné alludes.—*Edinburgh Med. and Surg. Journal, October,* 1835; *and Archives Générales, May and June,* 1835.

—

13. *Cessation of Pulsation in several Large Arteries of the Upper and Lower Extremities.*—The case of this, the most remarkable of the kind on record, is detailed in our cotemporary the *Med. Chirurg. Rev.* for April last.

A young female, aged 22, of healthy parents, had had a severe attack of pneumonia about three years ago, under Mr. Crisp's care. Subsequently she was in service at Hackney, where she had been exposed to cold, and never considered herself as quite well after the pneumonia. She had head-aches, and occasionally fits of hysteria.

Jan. 31st, 1835. She came under the reporter's care, complaining of pain in her legs and arms, with rigors followed by febrile action. Pulse small and 90 in number—bowels confined—tongue furred—pain in the epigastrum—menses regular. Aperients and febrifuges. These lessened the epigastric pains, but those of the lower extremities continued. On the 3d of February, Mr. Crisp was sent for, on account of severe pain in the stomach, with vomiting. The pain had left the lower extremities. She was bled to eight ounces, with relief. 4th. The pains returned to the extremities, and ceased in the stomach. 5th. Hands

and arms cold, with tingling sensation in the fingers. *No pulse at either wrist.* Heart and carotids acting strongly. On the 9th she was examined. Pulsation ceased about an inch below each clavicle—dorsal arteries of the feet beating forcibly at 90. 11th. The integuments of the right arm extremely painful. Dr. Whiting visited her, and found pain and tenderness, on pressure, along the main arteries of the arms. Ordered leeches below the right clavicle, and to have calomel and antimony.

13th. *No pulsation* could be felt in the dorsal arteries of the left foot, and indistinct in the popliteal. A thrilling sensation in the carotids, and *bruit de soufflet* over the heart. 15th. A slight vibratory movement felt in the radial artery of the left arm. 16th. Pain of the left leg severe. 18th. No pulsation in either of the arms—ceases about three inches below Poupart's ligament in the left thigh. The foot and fore-part of the leg of a purple colour—tips of toes cold—profuse perspiration over every part of the body. 22nd. *No pulsation in any artery of the extremities.* The toes and sole of the left foot black. March 6th. Since last report the pain has become excessive—very little sleep—pain in the region of the heart—bruit de soufflet—little and great toe of *right* foot black and painful. These were removed on the 8th March. We need not pursue the details of this curious case. On the fifth of October the left leg was removed below the knee. On slacking the tourniquet, there was very little bleeding from the large arteries—"*the blood not coming per saltum.*" The smaller arteries bled freely, and it was necessary to take up nine or ten of them. The leg was examined with great care. The large arteries were slit up, "but no trace of disease could be found in them." "They appeared to be smaller than natural."

We examined this young woman on the 21st December, in company with Mr. Crisp and Mr. Hooper, and noted the following particulars.

The stump is nearly healed. The temperature of all the extremities is considerably below par. The left arm has the highest temperature. In it there is a very faint pulsation of the radial artery. In none of the other extremities could we detect any action of arteries by the finger or the stethoscope. The subclavian of the *right* side presented the loudest *bruit de soufflet* we ever remember to have heard. The same in the right carotid. In the right axilla no pulsation could be felt or heard. The *left* subclavian gave out considerable *bruit de soufflet*, but less loud than on the opposite side. In the left axilla, a faint pulsation could be heard by the stethoscope. The *bruit* in the *left* carotid was in proportion to that in the subclavian of that side. The action and sounds of the heart were perfectly normal. The muscular strength of the limbs corresponded with the temperature and state of the circulation. It was very weak in all the limbs, but strongest in the left arm, where some pulse was still perceptible.

Examples of an analogous kind are recorded by Dr. Parry in his work on the pulse, by Dr. Ferguson (*Med. Chirurg. Rev.* xix. p. 285.) Ramazini (*Morgagni*) &c.

—

14. *Experiments with the blood of persons affected with cholera.* During the prevalence of cholera at Venice, in 1833, Dr. Namias instituted some experiments to ascertain whether the blood of cholera patients possessed properties injurious to life. He took a portion of the blood from the heart of a patient dead from cholera, and through an incision in the skin he inserted it in the subcutaneous cellular tissue of a large rabbit. The animal seemed to suffer but little from the operation, but five days afterwards it became dejected, its evacuations were less solid, appearances of white dejections were observed on the ground, and the animal died on the 10th day. The blood in the heart was found black and grumous, but without any particular lesion of the organs. The blood of this rabbit introduced under the skin of another rabbit caused its death in 24 hours. Appearances were observed on the ground of white dejections and the same phenomena were discovered on dissection. These experiments were several times repeated with the same results. It remained to determine whether the blood of patients dead from other diseases would produce the same effects. To determine this question Dr. N. inserted the black, liquid, fœtid blood of a person dead from intestinal gangrene, under the skin of a rabbit, without affecting the health of the animal. A similar experiment with the blood of an individual who had died of aneurism gave the same result.—*Gaz. Méd. de Paris*, 2 July, 1836, and *Bulletino delle Scienze Mediche.*

MATERIA MEDICA AND PHARMACY.

15. *Formula for the internal administration of Iron.* By MEURER.—The following formula, though much recommended by chemists, has been little employed in medicine. It is an advantageous substitute for chalybeate waters, which are less efficacious than it, and much more expensive:—℞. Sulph. ferri chyrst. 3ss., sacch. alb. 3iss., tere simul et divid. in chart. xii. ℞. Bicarb. sodæ 3ss., sacch. alb. 3iss., tere simul et divid. in chart. xii. Dissolve one packet of each separately in water, mix, and let it be taken as an effervescing draught. The decomposition is as follows; 1st, carbonate of the protoxide of iron; 2nd, sulphate of soda; 3d, a little undecomposed carbonate of soda, the quantity of bicarbonate being more than sufficient for the decomposition of the sulphate of iron.—*Dublin Journal*, from *Summarium des Neuesten in der Heilkunde.*

—

16. *Medical properties of the Tannate of Quinine and Cinchonin.*—In Hecker's Annals, December, 1834, is a Report by Dr. OTTO, of the Transactions of the Swedish Medical Association. This Report contains whatever appeared to Dr. Otto new and important, among the rest the following; Dr. RONANDER, the secretary of the association, recommends the tannate of quinine and cinchonin as the most active ingredients of Peruvian bark; he asserts that he has cured by their means several cases of obstinate ague, which had resisted the use of sulphate of quinine, and other powerful remedies; he has found these preparations also useful in typhus and other states of general weakness, and tendency to putrescence, where sulphate of quinine seemed to be ineffectual. These facts appear to prove, that although *tannin* is not properly speaking a febrifuge remedy, yet it contributes much to increase the efficacy of the febrifuge principles of bark, a conclusion long ago pointed out by Berzelius, who ascertained that the febrifuge powers of different species of cinchona do not depend merely on the quantity of quinine and cinchonin which they contain, but which is much influenced by the proportion of tannin that enters into their composition. The tannate of quinine is also a cheaper remedy than the sulphate.—*Dublin Journal*, Sept. 1836.

—

17. BATTLEY'S *Liquor opii Sedativus and Liquor Cinchonæ.*—This preparation, which has been made according to a secret formula for many years, is said to be formed simply by *macerating opium in distilled water* for a given time at an equable and gentle temperature (that of the laboratory,) with free access of light and air. About a seventh part of alcohol is added at the end of the process, in order to preserve the liquor.

Mr. Battley's "*Liquor Cinchonæ*" is prepared by macerating seven pounds of coarsely-powdered bark in seven gallons of distilled water for 24 hours, straining, and evaporating, to a certain extent, in wedgwood dishes. About four ounces of spirit may be added to preserve the liquid. It is said to be a preparation equal to quinin: seven or eight drops are a sufficient dose.—*Lancet*, 16 *April*, 1836.

—

18. *On Pharmaceutical Preparations.*—Dr. ROBERT D. THOMSON exhibited to the Westminster Medical Society (March 26th, 1836) several specimens of vegetable concentrated extracts, which were prepared by careful attention to the nature of the elements which entered into their composition. He remarked, that in regard to extracts, it is an important object to reject all those parts which have no action upon the animal system. For example, in the *extract* of *conium*, the only constituents which can possess any remedial agency, are *extractive* or *tannic* acid (both of which names are applied to substances possessing identical properties), and the oxide of CONEINE. But tannic acid readily decomposes under particular circumstances, as by exposure to the air, when saturated with moisture, and is then converted into a different substance, *ulmine* or *ulmic* acid, possessing different properties. The principle *concine*, in which the narcotic properties of the *conium maculatum* reside, is a colourless oil, but when exposed to the atmosphere, it is changed into a green resin, which imparts its colour to the extract. Hence a good green colour is a test of the genuine nature of this extract, if proceeding from the proper colouring matter, and hence a spurious extract is too often introduced into apothecaries' shops, which is coloured by means of salts of copper.

The specimens of this extract before the Society, possessed the green colour of the oxide of coneine in perfection, and after having been kept for two years, was as perfect as when first formed, and not a trace of copper could be detected by appropriate tests. It was double the strength of the common extract of the shops, a dose consisting of two grains and a half. The specimen of *extract* of *hyoscyamus*, also exhibited, had been preserved for a similar period, without being in the slightest degree impaired, either in appearance, chemical properties, or narcotic effects. Solubility is a test of the purity of this extract. Its dose is two grains and a half.

Dr. THOMSON called the attention of the Society to a new preparation, the *kinate* of *quinin*, from the *cinchona cordifolia*, in which the quinin, instead of being in combination with sulphuric acid, as in the form in which that medicine is usually administered, is retained in union with its native acid, and presented in the same form in which it exists in bark. The aromatic and astringent principles of the bark are also retained in this preparation, so that it actually comprises in a concentrated form all the active principles of the bark. It is pale yellow, quite soluble in water, and in doses of five grains forms a more powerful remedial agent than sulphate of quinin. Dr. T. observed, that in favour of the employment of this remedy, he might state that in the course of his experience in China, he had found bark much more effective in the cure of intermittent fever than sulphate of quinin, showing that the astringent principles of bark possessed a powerful influence on the human constitution. The great objection, however, to the use of the bark, is its bulky form. This objection is remedied by the kinate of quinin, which, from numerous trials, has been proved to possess fully the properties of bark.—*Ib.*

19. *Purgative without Nauseous Taste.*—The following preparation is said to possess a quality much desiderated in purgative medicines, it not being offensive to the taste. ℞. fol., sennæ 3ij., aq. font. f ℥viij. Infuse during ten or twelve hours in a covered vessel; then strain and make a cup of common coffee with this infusion, to which one-third milk is to be added. This purgative coffee may be taken without any disagreeable taste being perceptible. M. Baudelocque has experimented a number of times at the children's hospital, with this preparation, and it has constantly produced from two to six stools in the twenty-four hours, and does not occasion either griping, vomiting, or intestinal irritation.—*Bulletin de Thérapeutique*, 1835.

THERAPEUTICS.

20. *Acetate of Lead in Dothinenteritis.*—Dr. NASSE in an article in the *Medizinische Zeitung* (June and July, 1835,) states that he has advantageously employed the acetate of lead in fever accompanied with ulceration of the intestines, in seventeen cases, thirteen adults and four children. He administered it in doses of from a third to half a grain, repeated from three to six times a day. He combined it with carbonate of ammonia in eight patients who were very much debilitated. Dr. SPIRITUS had previously had recourse to the acetate of lead in fifty cases, with success; and the efficacy of the remedy has been extolled by Dr. JUNG in a thesis entitled "*De Dothinenteritide, eamque plumbo acetico sanandi ratione.*"

We have ourselves employed the remedy in several cases, and we think with advantage, especially in one case of autumnal fever treated by us within a few weeks, and which was accompanied with profuse hæmorrhages from the bowels. We have given it in rather larger doses than Dr. Nasse; and sometimes combined it with small portions of blue mass, and occasionally opium. The remedy seems deserving of more extensive employment in intestinal irritations.

21. *Deafness cured by Galvanic currents.* At a recent sitting of the Academy of Sciences, M. Magendie gave an account of a young Polish officer who, at the battle of Ostrolenka, in charging a battery which fired cannon shot, was struck down, though he received no bruise in any part of his body; he remained sense-

less for nearly half an hour. On reviving a little, it was found that he had lost his hearing, speech, and taste. He was for some time treated at Vienna with repeated bleedings and counter-stimulants, but without success; at Trieste, strychnine was employed by the endermic method, just as fruitlessly. He then came to Paris, where M. Magendie proceeded to remedy the deafness by galvanic currents, one of the wires of the pile being applied over the chorda tympani. At the very first trial an encouraging effect was produced: the patient heard a loud buzzing noise in his head. At the third application, the sense of taste began to be re-established,—a fact of much interest for the anatomist and physiologist, as it throws light on the origin of the chorda tympani and the functions of the fifth pair. After seven or eight applications of the same sort, the patient could hear a drum, a bell, and at last a human voice. Still, however, the tongue is incapable of voluntary movement, though it is expected that the cure will be eventually complete by the means already adopted, and applying the conducting wires to the laryngeal nerves.—*Gaz. des Hôpitaux.*

—

22. *Clinical Observations on the Effects of certain Medicines on the Heart.* By Dr. Lombard of Geneva. 1. *Assafœtida.* Applied externally, in the form of the Emplastrum Galbani comp. (L. P.), assafœtida seldom fails to quiet palpitations. Internally exhibited, it diminishes and renders more regular the movements of the heart, removes palpitations, and produces a state of tranquillity even in those most easily excited.

2. *Camphor.* Given internally, in doses of from three to twelve grains in twenty-four hours, it renders regular the most tumultuous palpitations, and removes the dyspnœa which often attends hypertrophy of the heart with dilatation. An enlarged heart, with obstructed orifices or dilatation, should be regarded as a muscle fatigued by its constant efforts to maintain an equilibrium between the fluids which enter it and those which are expelled from it: hence the indications are, to give it power by iron and quinine, and to regulate its action by camphor and assafœtida.

3. *Digitalis.* Its sedative action on the contractions of the heart is not constant, but seems to depend on the state of the stomach, mode of life, dose, and mode of administration.

(*a.*) When the stomach is irritated, digitalis often increases the rapidity of the circulation. When given to those whose stomachs are very sensitive, but not in an inflammatory state, it often produces vomiting, and the palpitations and frequency of the pulse disappear; if continued, the pulse becomes much slower, and no inconvenience follows but the shocks from frequently vomiting. The effects of the prolonged use of digitalis on the stomach are not to produce inflammation, but rather a particular state of the gastric plexuses of nerves, analogous to that observed in sea-sickness; and it is best obviated by antispasmodics and stimulants; such as subnitrate of bismuth, oxide of zinc, then nitrate or acetate of potash, effervescing drinks, ether, and spirits; all of which are employed with advantage in gastralgias accompanied with vomiting.

(*b.*) M. Lombard has very rarely found vomiting produced by digitalis in those who take much exercise, or whose attention is much occupied during its use. This explains why Orfila and others took twenty or twenty-four grains daily, without its diminishing the frequency of the pulse. If they had remained in bed, it would have been otherwise. It has been observed by many that there are very few accidents with digitalis in those cases where the patient is ignorant of the medicine he is taking. Hence patients should be kept in ignorance, and take as much exercise as their condition will permit.

(*c.*) Dose. As a diuretic, it should be very frequently repeated in the twenty-four hours; but, to quiet palpitations, one grain three or four times daily, or three or four spoonsful of an infusion made with one drachm of digitalis to six ounces of liquid, are sufficient.

(*d.*) The peculiar effects of digitalis on the stomach are produced most easily by the infusion; and they are guarded against in some measure only by combining with it ether and aromatics. For the same purpose, magnesia, sub-nitrate of bismuth, sub-carbonate of iron, and oxide of zinc, are combined with the powder. The subcarbonate of iron is recommended by the Italians, and M. Lombard has found it to be one of the best adjuvants to digitalis; for, by this com-

bination, patients have continued the medicine for many months without inconvenience. It may be given with the infusion. The oxide of zinc is employed by the Germans, and seems to act beneficially by calming an irritable stomach which previously rejected digitalis, not preventing the symptoms of saturation.

4. *Polygala Senega.* This is a valuable remedy in cases of irregularity of the functions of the heart. Twelve to twenty-four grains of extract, or one drachm of the root infused in four ounces of water, and given daily, appear to diminish the frequency and irregularity of the action of the heart, as well as the consequent sanguineous congestion, in individuals suffering from disease of the heart with dilatation of the cavities.—*Gazette Médicale de Paris*, 10 October.

—

23. *Treatment of Scald Head.*—By Baron Alibert.—The hair is cut as close as possible, and the head is washed for some time with a solution of carbonate of soda, or infusion of walnut leaves. An ointment, containing one drachm of soda to an ounce of lard, or two drachms of soda if the hair is thick, is then rubbed in, and the head covered with a piece of blotting paper. Mild bitter infusions are given internally: and, if it is suspected that the parents have a syphilitic taint, antiscorbutic medicines with mild mercurials. If the soda is inactive, it may be replaced by potash. In some cases, an ointment made with the burned leaves of belladonna or stramonium, or the same mixed with water, removes the disease.

Those affected with scald head in the dispensaries and hospitals of Paris have been put by government under the care of two brothers, named Mahon, who have cured above 50,000 cases in these public establishments. They begin by cutting the hair short, (to within two inches of the scalp,) and, after removing the scabs with emollient poultices, they wash the head with soap and water for several days, until it is very clean. They then apply a depilatory ointment, which removes the hair slowly and without pain, and sprinkle the head with a powder which forms the basis of the ointment, taking care to keep the scalp very clean. The composition of this ointment they keep secret. M. Rayer has endeavoured to supply its place with one consisting of an ounce of prepared chalk, two drachms of subcarbonate of potash, and one drachm of powdered carbon, mixed with lard; the quantity of which is to be increased or diminished in proportion as the scalp is more or less inflamed. M. Biett often prescribes the following lotion instead of the depilatory powder:

℞. Sodæ Sulphur. gr. iij.; Saponis Castil. ℥ss.; Alcohol, ℥ij.; Aquæ Calcis. lbj. Misce, fiat lotio.

M. Giscard, an army surgeon, employs successfully this ointment:

℞. Axungiæ, lb. ij.; Sulphuris, ℥ij.; Pulv. Carbonis, ℥viij. M. fiat ung.

After shaving the head, he directs a layer of this ointment to be applied over it, to be washed off two or three days afterwards with a solution of black soap. This application, repeated five or six times, has cured the most complicated cases.—*British and Foreign Med. Rev. No. III.* from *Journal de Médecine et de Chirurgie pratiques, Novembre*, 1835.

—

24. *Employment of Sulphuret of Carbon in Rheumatism.* Professor Otto of Copenhagen, has lately published some remarks upon the use of the sulphuret of Carbon of Lampadius in rheumatic and arthritic affections. He prescribes four drops of a mixture, composed of one part of the sulphuret of carbon, and two parts of highly rectified spirits of wine, to be taken every two hours; he also directs the affected parts to be rubbed with an embrocation, containing one part of the sulphuret of carbon and two parts of olivé oil. The cure, he states to be ordinarily effected in a period of eight or fifteen days.

In a case where the patient had suffered for three months, under an obstinate rheumatic affection of the inferior extremities, and lancinating pains of a similar nature on the left side of the chest, and in which this treatment produced little benefit at the end of a fortnight, Dr. Otto persevered with the friction, but discontinued the internal employment of this agent, substituting pills composed of calomel, antimony, aconite, &c. With the occasional use of these pills, the cure was perfected in three weeks.—*Annales de Chimie Médicale.*

—

25. Delpech's *potion for the cure of Gonorrhœa.* Take of mint water, orange flower water, Lemon Syrup and Balsam of Copaiba, each one ounce; Sulphuric

Acid, two drachms; Gum Tragacanth, q. s. mix. Dose, a spoonful night and morning. When the copaiba purges, laudanum is to be added in doses of 8 to 15 drops.—*Journ. de Méd. et de Chirurg. Prat. July*, 1836.

—

26. *On the treatment of obstinate Ague, and of the supervening Dropsy.* The following combination is recommended as very effectual in cases of obstinate old ague, attended with great weakness and torpor of the system, and a tendency to dropsy: ℞. Tannatis Quininæ, Piperi nigri, Pulv. Extracti Absinthii, ā ā 3ss. ♏ Ft. massa in pil. xxx. divide. When all inflammatory and bilious complications have been removed in tertian and quartan agues, three of these pills are to be given every third hour, until two hours before the paroxysm, when they are to be given every hour. In double quotidians and in quartans, the dose must be repeated every second hour. It is sometimes necessary to repeat them continuously throughout two complete intervals, and also during two days of the paroxysms, but then the dose may be diminished. In some it is necessary to substitute a small quantity of opium in place of the pepper. Dr. Collin of Nordköping makes a remark, which has been long verified by British practitioners, that in obstinate agues, which originate in neglected obstructions of internal viscera, particularly the liver or spleen, a short course of calomel forms an excellent preparation for the administration of bark. Dr. Hecker recommends in such cases the combination of quinine and calomel, each a grain. Dr. Collin treats the dropsy, which is so frequently a *sequela* of ague, first with deobstruents such as calomel and conium, and afterwards with tincture of cantharides, commencing with a dose of eight drops, gradually raised to twenty, and repeated three times a day in some mucilaginous medium. He says, that he has never derived any benefit from digitalis in such cases. Dr. Ronander, in cases of dropsy preceded by ague and attended with great debility, but not dependant on visceral obstruction, or any evident organic lesion, recommends the following pills; ℞. Sulphatis Cupri gr. x. Aquæ Distillat. q. s. ad solutionem adde Pulveris Radicis Belladonnæ gr. x. Pulv. Zingiberis gr. x. Extracti Absinthii 3ii. ♏ Ft. pil. lxxx. He commences with two pills three times a day, and every second day adds one pill to the dose, until some effect is evidently produced either by the sulphate of copper or by the belladonna. He usually assists the action of this medicine by the use of mild vegetable diuretic drinks, such as the infusion of juniper berries.—*Dublin Journal* from *Hecker's Annals.*

—

27. *Cases of Ischuria cured by the process of Somervail.* Such is the caption of an article in a recent No. of *Il severino, Giornale Medico-Chirurgico.* In our No. for May, 1834, we inserted a communication from our respected and venerable correspondent, Dr. Somervail of Virginia, on the efficacy of a mixture of camphor and muriate of ammonia in the treatment of suppression of urine. This prescription we are happy to learn has proved effectual in two cases on which it has been resorted to by Professor Grillo, and which are reported in the Italian Journal the title of which we have just given. The subject of the first of these was a military man 70 years of age who was attacked with ischuria whilst labouring under bilious fever. The urine was drawn off by a catheter and it was necessary to resort to the repeated introduction of this, and finally to keep it in the urethra as the ischuria persisted. After 120 days perseverance in the use of the instrument, the patient despairing of a cure got into a paroxysm of rage, which brought back his fever, caused violent colic pains, during the attacks of one of which the catheter escaped from the urethra. The ischuria reappeared with violent pain, and Prof. Grillo then prescribed Dr. Somervail's remedy with a slight variation, as follows:—℞. Gum. Arab. ʒss; Aq. Puræ Ojss; solve et adde Gum. Camph. gr. iij; Mur. Ammon, gr. v. He ordered one-fourth of this to be taken immediately and the remainder in the course of three hours. Before the patient took one half he passed his urine in sufficient quantity, at first with some difficulty but afterwards with entire facility. The remedy was continued some time and the patient was perfectly cured.

The result was equally fortunate in the second case, that of a man 60 years of age, affected for about thirty hours with ischuria from a rheumatic affection.

—

28. *Remarkable effects of the sulphate of Zinc.* Dr. Elliottson has employed the sulphate of Zinc for the cure of epilepsy. The medicine is said to have had the

most singular effects on the patient, a young woman aged 29, in fact, intoxicating her. The dose was increased by degrees to 14 grains, three times a day, this produced symptoms of gastritis, which being relieved, the medicine was again resorted to, but she could not reach higher than five-grain doses, as a single grain more affected her with sickness. Previous to taking the sulphate of zinc she had been going through courses of nitrate of silver, and the ammoniated copper, without any good effect, except from the first, which after the lapse of five weeks appeared to have made the fits weaker, though not less frequent. The copper, if any thing, seemed to have made her worse, the fits being stronger and occurring oftener after its administration than before. She began the sulphate of zinc on the 19th of March in two-grain doses. On the 12th of April it had been gradually increased to fourteen grains three times daily; she had then some slight symptoms of gastritis; it was resumed on the 19th in smaller doses, and continued up to the 25th of May, when she was discharged for misconduct. The fits had become gradually less frequent, she had had no fit since the 12th, though before she took the zinc she had generally two fits every day. If this could not be considered a cure of the disease, Dr. ELLIOTTSON remarked, that at all events it was a singular suppression of the fits.—*Lancet*, 9 July, 1836.

—

29. *Artemesia Absinthium in Epilepsy.* Dr. ELLIOTTSON has been induced to try the effects of the Artemesia absinthium in epilepsy, in consequence of a German physician having suggested it to Dr. THOMPSON in that affection. The patient to whom Dr. ELLIOTTSON gave the medicine was a girl aged 17, who had been affected with epileptic fits for four months past; three or four of them occuring daily. A drachm of the powder of artemesia was given three times a day, this was on the 30th of March. On the 9th of April it was increased to two drachms; the fits became less frequent, but not less severe. On the 16th the dose was repeated every four hours; she had only one slight fit in the course of twelve days; and on her dismissal on the 24th of May she had had no fit for twenty-six days. Dr. ELLIOTSON said he should certainly try the medicine in other cases of this affection. He thought that the strong infusion would be less offensive to the patient, and quite as effectual as the powder.—*Ib.*

—

30. *Diseases simulating acute inflammatory attacks of various important organs, and dependent on ganglionic or spinal irritation. The Edinburgh Medical and Surgical Journal* for October, 1835, contains two instructive cases of this character, with some interesting remarks by JOHN TORBET, Esq. These cases do not admit of much abridgment, and they are too long for insertion entire; but we shall present to our readers the substance of Mr. T's. observations.

Neuralgia, (a term which Mr. T. uses as synonymous with spinal, ganglionic, or cerebral *irritation*,) may attack any part of the nervous system, from the minute fibrils spread on the organs of sense, to the great nervous centres. "In attempting a general outline of such diseases," remarks Mr. T. "it is in vain to look for any thing like unvarying regularity of symptoms. We know nothing of the exact morbid condition giving rise to the symptoms. It may be of various kinds; and besides, in so delicate and complex a tissue as the nervous system, we may easily conceive the many modifying and controlling circumstances, that cannot fail to occur, in each individual case, when that system becomes the subject of morbid irritation, and thus vary the external phenomena. But though systematic exactness be out of the question, it is still possible to give something like a characteristic outline.

Of the diseases in question, females frequently before, sometimes after, puberty are the most usual victims. The individuals are of what is called irritable constitution,—a peculiarity, moreover, in some instances, distinctly hereditary, and connected more or less with strumous diathesis.

The morbid train of neuralgic symptoms is most usually set in operation either by a serious inflammatory or febrile disease, by excessive fatigue, or by injury, as from a heavy lift or severe fall. The severity and variety of diseases to which the individuals appear to be liable might almost characterize the affection. You are astonished to hear of their violent illnesses, the powerful remedies that are applied, and the rapidity with which they shake off these attacks. In severity, their diseases resemble those of no other person. They are paralytic, blind,

speechless, without food, and without sleep for weeks or months, and yet they do not *die*.

Is the *head* the organ affected? They have head-ache, of which no words can convey an idea, ending perhaps in insensibility, or there is a heavy weight pressing down their eyelids, a tight bandage compresses, or hammers beat within their head, bells ring in their ears, vertigo and sickness overpower them, noise and light disturb them.

Is the *chest* affected? A sepulchral cough, each fit of which seems to threaten existence, over which medical art seems to possess no control, harasses from morning till night and night till morning. There is excruciating pain in the chest, especially during the cough, which is perfectly devoid of expectoration. There is a feeling of swelling and choking at the under part of the neck, tremendous palpitation of the heart; the pulse is quick and agitated, but varying greatly with the severity of the cough; and the heart's pulsations seem to occupy the whole left side of the chest.

Is the *digestive apparatus* the seat of disease? Then ensue vomiting without any apparent cause: incessant retching for hours, occurring perhaps every day for weeks, without any thing being vomited; no appetite; unquenchable thirst; occasional severe pain in the belly; or muscular cramps; and costiveness alternating with diarrhœa—the stools unaccountably copious.

Are the *organs of voluntary motion* the parts attacked? There are then cramps, prickling or numbness, sometimes severe spasms, liker tetanus or hydrophobia than any thing else, ending possibly in catalepsy, or paralysis of one or more limbs ensues.

Such is an epitome of the symptoms of the more violent cases; but an almost endless variety must of necessity occur, according as the several nervous centres are affected and their affections modified, by individual circumstances. It is precisely from this variety and anomaly of appearances that practical men are apt to be misled. The most marked symptoms are apparently so distant from, and unconnected with nervous irritation, and are moreover so violent and similar in their character to pure inflammatory diseases, that there is great risk of our chief curative efforts being directed to the appendages, and coincidents, instead of attacking the disease itself.

As to *diagnosis*, I shall confine myself to an attempt to distinguish neuralgic cases from cases of pure inflammation.

The constitution of the individual—the history of the attack, its frequently instantaneous seizure, its recurrence—the very severity of the symptoms, their occasional great discrepancy, their obstinate resistance to ordinary remedies, their metastatic and anomalous character, and apparent independence of organic affection—the minutely circumscribed locality which is the seat of pain or irregular action—the character of the pulse—the absence of the usual precursors of inflammation, or very abnormal character when present—are perhaps the chief circumstances to be attended to.

The constitution is extremely susceptible and irritable. In most cases it will be found that a variety of anomalous symptoms and affections, sick head-ache of great severity, retching, lancinating pains, languor and frequent faints, or aggravated hysterical symptoms, have been the precursors of a violent attack, although these may very likely not be considered as at all connected with the after train of symptoms. The attack, unlike inflammation, is not progressive, but in a very short time attains its height, and without shivering or other febrile precursors. The symptoms, though relieved for a time, are constantly recurring, and even often observe a degree of periodicity quite unlike inflammation. The pain in *neuralgia* is greatly more severe and agonizing than in pure inflammation, and is, moreover, not amenable to antiphlogistic or anodyne remedies. In inflammation there is no such phenomenon as excruciating pain darting from the back to the head, and instantly producing incoherence or delirium, nor such metastases, as from vomiting to cough, or pain in the chest to tooth-ache, or from cramp in the belly to overpowering head-ache, with perfect relief to the alternate symptoms in the successive changes. In inflammatory diseases, if they continue a certain time, organic changes ensue. Vomiting or cough continuing for weeks, and dependent on inflammation, would unquestionably be accompanied with corresponding changes of structure in the respective viscera, more or less easily to be ascer-

tained. The same symptoms continue for months in neuralgic cases without a shadow of evidence of any organic change. In neuralgic affections, (of the chest or belly for example,) the pain is confined to one spot, the least touch of which produces agony. This exquisite isolation is very rarely a character of inflammation. When, as sometimes happens, these internal and visceral pains alternate with similar acute pains in the limbs or external parts, the diagnosis becomes much easier.

In neuralgic cases, the firmness and hardness of the pure inflammatory pulse are not observed, unless in occasional combinations with the *phlegmasiæ*. On the contrary, along with great frequency, there is a bounding, a softness, and agitation in the strokes of the pulse, understood by practical men under the denomination of irritable pulse.

The violent symptoms in neuralgia are not ushered in with regular febrile precursors. More or fewer of these may indeed be present, but they want the regularity they present in inflammatory attacks. In neuralgia every thing is in excess; the heat for instance intense, the thirst unquenchable, the pain extreme; but there is a discrepancy and hurry in the symptoms, which, to say the least of it, forms the exception and not the rule in inflammatory cases.

When there is such discrepancy as violent pain, or incessant cough, with a calm and natural pulse; panting breathing without hurry of the circulation; sudden numbness or paralysis of the limbs occurring in the midst of a fit of coughing; violent head-ache or tooth-ache, or muscular spasm ending in catalepsy, &c. the nature of the case becomes very clear. Lastly, examination of the spine in many cases removes all doubt, by discovering to us points so tender as to cause agonizing pain, or perhaps the very symptoms of the disease on slight pressure. It must, however, be kept in mind that, if the ganglionic system be the centre affected, an examination of the spine affords no evidence of the morbid affection.

The prognosis in neuralgic cases, especially when not much complicated with inflammatory phenomena, may in general be favourable.

Treatment.—On this topic I need not dilate. When the nature of the case is clearly seen, there will, I believe, be little difference of opinion as to the mode of treating it.

In complicated and violent cases, such as those narrated above, blood-letting to a greater or less extent seems absolutely necessary; but even in these cases this powerful remedy is to be viewed as a palliative not a radical cure. It may moderate the symptoms, and render their violence less likely to injure the various organs, but blood-letting will not remove the disease. On the contrary, I believe, a state of *anemia* greatly aggravates such distressing neuralgic affections, which in many of their symptoms greatly resemble that painful condition. In neuralgic cases, blood-letting will not calm the circulation, nor will it altogether remove or prevent the recurrence of pain; but judiciously applied, and apportioned to the strength of the patient, it will eminently palliate violent symptoms. In neuralgic cases blood-letting is to be resorted to as a palliative resource when other less energetic measures fail. In inflammatory diseases blood-letting is our chief dependence, and by its appropriate application we may fairly hope to remove the disease suddenly. While, however, this important distinction is to be kept in view, we are also to recollect, that in neuralgic cases, inflammatory complications requiring more active treatment are occasionally recurring; but even here the neuralgic condition must influence our treatment.

Local blood-letting frequently affords temporary relief, and is generally safer than repeated general blood-letting. When the suffering point of the nervous system can be determined, however, topical bleeding there will afford infinitely more relief.

Detraction of blood in all forms, however, must be proportioned to the character and the violence of the symptoms, and the strength of the patient.

The judicious administration of purgatives is a matter of great importance; but so much has been written on this subject, that I deem it unnecessary to say a word.

To moderate the agonies of neuralgic suffering, *anodynes* must be a chief reliance. In many cases, indeed, they seem food and drink to the poor sufferer. In urgent cases they must be given in full doses, and frequently repeated, so as to

keep up the narcotic effect. It is truly fortunate when opium in any shape agrees with the patient, for when it does so I consider it by far the best.

Veratria, I confess, much disappointed me. It produced the local tingling, characteristic of its action, but had not the slightest effect in relieving the painful symptoms, for the relief of which it was applied.

Of course in every case much modification both of the medicines and the form of their administration will be required; but after all it is to the suffering nervous centre that our chief attention ought to be directed.

When the ganglionic system is the centre affected, the symptoms are very uncontrollable; but even then, in addition to the general means already hinted at, local bleeding at different parts of the dorsal spine and chest, with occasional blisters or other counter-irritation, ought to be tried.

When from examination we have evidence that the spinal system is the diseased source, we have every reason to be sanguine in our hopes of local treatment in the various forms in general use, and this part of the treatment ought to be our chief aim.

When the cerebral system is affected our applications must be directed there.

Absolute rest in the horizontal position is in many cases beneficial and necessary; free air and well regulated ventilation are very important adjuvants.

When the state of the patient admits of change of scene, country air, and gentle carriage exercise, they ought to be strenuously enjoined, as the benefits thus resulting are often great and striking.

The regulation of diet, and indeed many other particulars of treatment, Mr. T. purposely passes over, because they are obvious.

—

31. *On the therapeutic influence of atmospheric heat.* The *Archives Générales de Médecine* for July, 1835, contains a highly interesting memoir by Dr. Jules Guyot, on this subject. The first question relative to this subject which he has selected for the purpose of solving by experiment is, what is the temperature most favourable to the cicatrization of wounds?

Hippocrates remarked that warm weather, is more favourable than winter to the greater number of wounds. Ambrose Paré, drawing a practical conclusion from this observation, recommended that wounds of the head in winter, should be treated by vibrations of iron heated before the fire. Since that time, most surgeons have understood the favorable influence of an elevated and uniform temperature; but this fact still remained as a simple observation; and even the essays of Ambrose Paré were almost forgotten. Dr. Guyot has just brought them forward again in a new form; and by giving to his experiments the greatest degree of accuracy, he has arrived at results, which ought to engage all the attention of practitioners.

He has experimented on thirty rabbits; and many of these having been employed a second and third time, the number of experiments amounted to sixty-four. Let us first give an idea of the apparatus, and mode of experimenting.

The principal apparatus consists of a case of wood, with four compartments one above another; each of which will contain two rabbits easily. Each is closed behind by a slide, which may be drawn out laterally, and has in front a contrivance for holding food. A vertical pipe passes through the middle of them all, and opens into each by a mouth, through which the heat passes, and which may be more or less opened at pleasure. The inferior extremity of this pipe incloses the upper part of the lamp, which burns throughout the twenty-four hours, and which heats all the compartments at once, to the degree that may be wished for. An aperture in the side of each compartment, allows the introduction of a thermometer, which constantly indicates the temperature. A strong curtain, pierced with two holes, each capable of admitting the head of a rabbit, is nailed before each compartment, leaving the food-trough outside, so that the rabbits may have their bodies plunged in the hot air, while their heads are free.

A second apparatus is constructed after the same manner; but the rabbits are here enclosed entirely. Four windows are adapted to it, to permit a view of what passes in the interior. The first apparatus, then, gives a heat diffused over all the body except the head; the second, a heat diffused universally; lastly, topical heat is applied in the following manner. On a large bench, seven rabbits are fix-

ed, by means of ribands, fastened to the feet; each rabbit being furthermore enveloped in a piece of linen fastened all round him; so as to leave no part uncovered except the head, and the wounds which had been made on the buttocks. Between every two rabbits, opened a pipe passing through the bench, and having beneath an inverted funnel, to receive and concentrate the heat of one or more lamps placed below. Superiorly the pipe opened in such a situation as to give an equal degree of heat to the wounds of both rabbits. Let us now see the results.

Two rabbits plunged wholly into a heated atmosphere, presented nothing unusual till the temperature reached 25 degs. (of the centigrade thermometer,) when the respiration began to be accelerated. At 35 degs. there was faintness, with commencing perspiration; at 40 degs. prostration, with the escape of saliva from the mouth; at 50 degs. the respiration was so much hurried, that the movements could scarcely be counted; and at 60 degs. the animals ceased to give any signs of life, after an immersion of two hours. Removed into the surrounding temperature, they gradually recovered, and were well in twenty-four hours.

Two other rabbits, one of which had suffered amputation of the thigh, and the other with a penetrating wound of the chest, were plunged into an atmosphere at 40 degs. The first died at the end of an hour; the second after eight hours.

With respect to temperature diffused over the body alone, by means of the first apparatus, the results were very strange; and one can scarcely avoid thinking that some accidental circumstance had occurred to interfere with the results. Thus the rabbits supported very well a temperature from 25 to 35 degs.; but from 35 to 45 degs., the depression was constantly extreme, the appetite gone, and the respiration quickened. Above 45 deg., on the contrary, to 50, 60, 70, and even 76 degs., they remained very well; without any other general perturbation than a slight acceleration of the breathing, which often did not remain long. The author confines himself to the statement of the fact, without even attempting an explanation.

The following is the result of the observations made on the wounds submitted to this diffused temperature. Of four simple incisions in the thigh, an inch and a half in length, constantly heated to 60 degs., two were united in from four to six hours; the two others, remaining open, furnished for twelve hours a serous exudation, which gradually dried up in the form of a shining varnish, red and transparent. In the twenty-four hours which followed, a white solid matter appeared under the varnish, while the borders of the wound were drawn towards each other. The third day the wounds were reduced to a line in breadth. On the fourth the crust which remained was renewed, and the cicatrization was complete. It appeared to have taken place without inflammation; and as for suppuration, it certainly did not occur. Of four other wounds of the same dimensions exposed to a temperature of 14 degs. only, (two exposed to the air and two dressed) the first were not cicatrized till the twelfth day, the others not till the fourteenth or fifteenth, all having suppurated.

Dr. Guyot afterwards experimented on wounds with loss of substance involving the aponeurosis, an inch and a half in length, and three quarters of an inch in breadth. Two of these wounds, submitted to a temperature of 50 degs., poured out for twenty-four hours a viscid and scanty serous fluid. They afterwards became covered with the kind of red varnish already mentioned. At the third day were perceived points on which were deposited a white solid matter, which appeared to be the "plastic matter" of M. de Blainville. This layer extended gradually, and by the seventh day appeared to form a true membrane over all the surface of the wound. At the same time the wound contracted. On the tenth day it was not more than two lines broad; and by the eleventh or twelfth the cicatrization was complete. Two wounds of the same kind, involving the muscular tissue to the depth of two lines, exposed to a temperature of 40 degs., were cured by the fourteenth day. Others, at the ordinary temperature, suppurated, and were not healed till the nineteenth, or even the twenty-second day. The influence of a high temperature was not less beneficial in the case of wounds which had previously been treated in the ordinary manner, and which had thus been already brought into a state of suppuration.

The amputations were less successful in their results. All the rabbits died, either with tetanus, or from perforation of the intestines. The same fate attended others, in which the chest was opened by an incision in the side; but one, sub-

mitted to a temperature of 36 degs., was completely cured in sixteen days; the wound being perfectly cicatrized without having suppurated.

The experiments with the third apparatus did not succeed. The rabbits deranged it, and burned themselves at the orifice of the tube. It became necessary to abandon it; but Dr. Guyot experimented in another manner on the local application of heat. He injected into the head of a rabbit, water at the temperature of 8 degs., and into the head of another a similar quantity of water at 32 degs. Both at first gave evidence of being stunned, and of great prostration of strength; but after the interval of an hour the rabbit in which the cold water had been used appeared completely recovered; while the other remained ill and suffering for forty-eight hours. The same difference was exemplified in comparative injections of water at 8 degs. and at 32 degs. into the abdomen of two rabbits. Ultimately all the four animals recovered.

Much controversy has arisen on the action of instruments at different temperatures. Dr. Guyot says that in the great majority of cases he observed less muscular trembling, and the absence of cries, when he operated on these rabbits with instruments heated to 25 or 30 degs. But still in a great number of cases he could not perceive any difference in the action of hot and cold instruments.

Hitherto the experiments had been made only on the lower animals. It was desirable to try them upon the human subject. M. Magendie having been made acquainted with the results obtained, and having ascertained that a wound of a rabbit, round and the size of a five-shilling piece, submitted to a temperature of 45 degs., did not present at the eighth day either inflammation or suppuration, and yet tended nevertheless to cicatrization, requested Dr. Guyot to try the effect of heat first upon ulcers. It was in the wards of M. Breschet that the first four patients were treated; two others in those of M. Roux, then surgeon at La Charité; and lastly one at Val-de-Grâce.

The apparatus consists of a rectangular box, ten inches square, and twelve inches long, closed at the two extremities by a cloth nailed all round, and presenting in the middle an opening, which can be enlarged and diminished at pleasure, by means of a cord passing through a hem in the cloth, and entirely surrounding the aperture. The affected limb is passed through these two holes in such a way that the wound is placed in the middle of the box, and a door which opens above, permits us to examine it. Into the side of the box is fixed a tube, which passes horizontally across the lid till it reaches the side of the latter, then descends perpendicularly, again becomes horizontal and lastly vertical, in order to adapt itself to a lamp. Above the last portion of the tube is a groove, by means of which may be opened or shut at pleasure an orifice destined to let a part of the heat to escape. An aperture in the top of the box permits the introduction of a thermometer, the tube of which being external, allows the temperature to be noted. The limb rests upon cushions.

By the assistance of this machine, and a heat of 45 deg., two patients at the Hôtel Dieu, affected with ulcers of long standing, were cured with a very firm cicatrice. Two others received only an amelioration. It is worthy of remark, that in the case of one of these last patients, the heat having reached 60 or 70 deg. the ulcer suppurated abundantly, and gave forth a very disagreeable odour, until the temperature was lowered. Of the two ulcers treated at La Charité, one healed very well, but the other did not go on to complete cicatrization. At Val-de-Grâce the treatment was interrupted before the cure.

Dr. Guyot also tried his apparatus on a white swelling. He removed the lancinating pains; but having raised the temperature to 60 degs., the tumour was found next day to be increased in volume. In another patient, operated upon for popliteal aneurism, by ligature of the femoral artery, two hours of immersion, in a temperature of 35 degs., sufficed to calm the painful cramps which had prevented sleep. The author likewise obtained remarkable relief in a case of sciatica, by a temperature of from 35 to 50 degs. But all these cases are incomplete; since either the apparatus was not applied long enough to effect a perfect cure, or the patients are still under treatment.

The local application of heat, then, has not succeeded so well with the human subject as with rabbits. But the circumstances are very different in the two cases; and it is easy to conceive that a remedy very proper for curing a recent wound, or a *simple* ulcer, may fail when applied to a *complicated* ulcer. In other respects

the results are sufficiently encouraging; and during the cold season especially, in the extensive wounds produced by certain operations, the application, prudently directed, may acquire an importance of which experience alone can reveal the extent. It is for hospital surgeons to ascertain for us its value.—*Gazette Médicale.*

—

32. *On the employment of Balsam Capaiba in purgative doses in catarrh.* Dr. ARCHAMBAULT REVERDY has published in the *Recueil des travaux de la Société Médicale d' Indre et Loire*, a very interesting memoir on the use of the Balsam of Copaiba in pulmonary catarrh. According to this physician, the well known efficacy of this medicine does not entirely depend either on its purgative property, or on a specific action which is attributed to it by many practitioners, but to these two properties united; so that to obtain entire success, it is necessary to administer this article in purgative doses, and that nevertheless other purgatives administered with the same views, do not exert so decided an influence in the cure of pulmonary catarrh.

The work of Mr. A. R. contains three series of observations in support of these different propositions; one shows the success obtained by copaiba in purgative doses; the second, the inefficacy of the same article in small doses, and the third, the inefficacy of ordinary purgatives.—*Jour. de Méd. et de Chirurg. Prat.* May, 1836.

—

33. *On the Simple Antiphlogistic Method of treating Syphilis.* By M. DEVERGIE. (Concluded from last No.)—The mean duration of treatment employed for the removal of simple or complicated, primary or secondary, symptoms varies from twenty-eight to thirty-two days.

"The same result was obtained by M. Desruelles of the Val de Grace in about 2000 venereal patients, treated by the same method in the hospital, and in the appendage in Rue Blanche, between 1825 and 1834; whereas the mean duration of treatment in patients subjected to the use of mercury by the same practitioner was fifty days.

The same result was obtained in 700 venereal cases treated by M. Barthelemy of Saumur, at the same establishment in 1833.

M. Villars, Chief Surgeon to the Military Hospital of Besançon, obtained an average of thirty-seven and a half days by the simple treatment in 740 cases and fifty days by the treatment by mercury.

M. Desruelles, Senior, and M. Rapatel, obtained at the Military Hospital of Rennes the following results from the two methods. In 1827, 1828, and 1829, 1187 cases of primary symptoms treated by the simple method gave a mean duration of thirty-four days; 378 cases of primary symptoms treated by mercury took an average duration of fifty-nine days; in the succeeding eighteen months (1830, 1831) 876 venereal cases subjected to the mercurial treatment occupied a mean duration of twenty-nine days, whereas forty-eight cases treated by mercury occupied an average of eighty-one days.

The same advantages were obtained at Strasbourg in the treatment of 4000 venereal cases by M. Keyser, who, for a space of eight years, has effected an important modification in the treatment of syphilis in an hospital in which M. Richonde began successfully in 1822 and 1823 his comparative trials upon 2000 venereal cases.

At Algiers, M. Flechutt, Surgeon Major to the Military Hospital of the Dey, has treated by the method with similar results, 5000 between 1831 and 1835.

Notwithstanding the evidence of these facts M. Lepelletier of Mans, M. Girardin, and M. Moreau have advanced regarding the injurious or the inefficient result of the simple non-mercurial treatment, various assertions, which M. Devergie maintains to be unfounded, and therefore controverts.

1. M. Lepelletier states that, at Mans, he treated by mercury many soldiers labouring under primary symptoms, *all of whom recovered, nor did one enter the hospital on account of relapse*, while the soldiers sent to Rennes, where the treatment without mercury was observed, returned frequently with constitutional syphilis. He counted, he states, *about eighty cases.*

This assertion is declared by M. Desruelles of Rennes to be unfounded, and in proof he adduces the following statement.

348 venereal cases were treated at the Hospital of Mans, between 1829 and 1834, by the mercurial method, and all were cured, according to the statement

of M. Lepelletier, without relapse. 226 venereal cases from the same regiments were at the same time sent to the military hospital of Rennes. 199 were cured by the simple treatment, and 26 by means of mercury. 7 only of these soldiers entered the hospital of Mans for relapses and *sequelæ*, and not 80, as stated by M. Lepelletier; while 31 patients treated at Mans, by means of mercury, entered the hospital at Rennes, for relapses and consecutive symptoms.

M. Girardin, stated to the Academy, that at Strasbourg, where the military physicians were the foremost to denounce mercury, they equally soon recognised the inefficiency of mere antiphlogistic means. But as they dared not return to the banished remedy, they had recourse to iodine, thus substituting one specific for another.

This statement is refuted by M. Keyser, of Strasbourg, who writes, that he could easily prove the very small number of relapses, by the long residence of the artillery regiments in the garrisons; that more than two years have elapsed since he has seen any disease of the bones, which he ascribes to withholding mercury, or limiting, to an infinite degree, the use of mercurial medicines; and that it gives him surprise to learn through the Academy, that the simple treatment had been so unsuccessful, that it was requisite to give it up, and that iodine had been substituted in its place.

3. M. Moreau states that *cases of hereditary syphilis have been seen only since the antiphlogistic* method has been generally employed.

This assertion, M. Devergie maintains, falls to the ground by its own weight. The simple method is still confined in France, within a certain circle, including several military and some civil hospitals, and is adopted after a long lapse of time, and consequently it must have been impossible yet to obtain the results represented to have been obtained by M. Moreau; and lastly, relapses are much less frequent and less severe since the general employment of the antiphlogistic method.

If the mean duration of the rational treatment employed regularly since 1821, in different hospitals, be compared with that required by the mercurial treatment, still actually employed at present, an enormous difference is recognised. At the Val de Grace the average was in the following proportion.

	Patients.	*Days.*
1821, -	872 -	71
1822, -	797 -	60
1823, -	406 -	63
1824, -	1338 -	60
1825, 6 months,	505 -	56

The progressive diminution observed in the latter years is to be ascribed, M. Devergie thinks, to the modifications which he introduced into the practice of the hospital, where he was attached in the capacity of adjunct-surgeon-major.

A serious objection urged by the opponents of the simple rational method is, that it does not prevent relapses, which are frequent, and that the secondary symptoms are numerous. This objection, M. Devergie maintains, is urged only by those who have imperfectly examined the question, and the decision is not confirmed by experience, but merely favoured by a few isolated facts. The change of garrison, which does not allow the same troops to remain at Paris beyond two years, renders it impracticable to obtain exact numerical returns. The great number of venereal patients, however, who enter the hospitals, shows that the charge is exaggerated, and proves that the cases of relapse and secondary symptoms do not exceed in Paris the number published by the Sanitary Commission of Sweden, which is from 7 to 8 *per cent.* while they amount to 14 *per cent.* under the ordinary mercurial treatment. Relapses, when they do occur, he maintains, are shorter in duration, and milder in degree.

Neither M. Devergie, nor any of those practitioners who have joined him in giving the simple method a full trial, have denied the occurrence of relapses. M. Desruelles gives a list of 38 patients who had been readmitted into the Val de Grace and at Picpus, during 1827 and 1828; M. Richond at Strasbourg, mentions a twentieth part as cases of relapses; M. Keyser of the same hospital allows a few took place; and M. Fleschutt of Algiers admits 173 in 5000 venereal cases treated. There the regiments are changed only every four years, like the artillery,

which remains from five to six years in the same garrisons at Strasbourg, Rennes, Paris, &c.

The table of M. Desruelles gives the following comparative numbers of relapses in cases treated by mercury, and in those treated without that mineral. 29 relapses after treatment without mercury, employed by the same means, only 39 days, while 7 relapses after treatment without mercury, then subjected to the mercurial influence, required 73 days. 26 relapses after mercurial treatment recovered under the simple treatment in 35 days, while 6 relapses after the same mercurial treatment required a mean of 113 days, being treated anew by means of mercury.

M. Devergie makes the following general statements on the therapeutic effects of the method.

1*st*, Relapses in cases treated by the simple method are less numerous and less severe than those which follow the mercurial method. 2*d*, They recover more easily, and rarely require the employment of energetic means. 3*d*, The wards no longer contain those degenerated forms of disease termed *pseudo-syphilitic*, the result of the abuse of mercurial medicines in every shape, obstinately and lavishly administered to destroy and neutralize the virus; while we still find unfortunate examples in the practice of physicians, who know no other means than mercury for curing degenerated diseases, and the civil and military hospitals still receive deplorable victims of the abuse of this mineral. 4*th*, The affections from the provinces of the fibrous and osseous system are so much diminished, since the use of mercury has been restricted, that scarcely are any instances met in the wards. M. D. estimates them at 1 in 500 cases.

Against those who contend for the employment of mercury in the treatment of venereal diseases, the following arguments may be urged:

1*st*. That mercury is very far from always curing syphilis; 2*d*, That it prevents neither relapses, nor secondary symptoms; 3*d*, That the secondary symptoms are then more obstinate, more severe, and require longer time to be subdued; 4*th*, That there is formed in certain patients a pseudo-syphilitic diathesis, which is still further aggravated by perseverance in the same remedies; 5*th*, That it induces mercurial diseases or severe and incurable disorders; and 6*th*, That many other therapeutic means are capable *alone* of curing venereal disorders, without the aid of mercury.

M. Devergie does not, however, while he advocates the employment of simple rational means, propose to exclude mercury altogether from the therapeutic agents for the syphilitic disease. However apprehensive of its perturbing effects, he allows its restricted employment, when other means are inadequate. Some of his patients have used it, not as a specific, but as a powerful modifying agent. And it is his opinion that it is rational to regard the simple method as a general one, and to administer more powerful modifying agents only in the exceptions.

The simple mode of treatment, he also observes, furnishes the only means of drawing an exact comparison, and enabling us to distinguish between the effects of syphilis and those of mercurial medicines.

The treatment pursued by M. Devergie may be distinguished into the following heads:

1. *Regimen.*—Light soups, oftener lean than fat, with bread and grains, milk in different forms, ripe fruits, baked, eggs, and the leguminous grains, seldom meat and fish, bread varying in quantity, according to the necessity of a regimen more or less rigorous; no wine or malt liquor, unless upon the disappearance of the symptoms and during convalescence.

2. *External Treatment.*—This varies according to the form of the disease; but in general it is the simplest possible. Fomentations, emollient poultices, local or general baths; local blood-letting by means of leeches, the simple or opiate cerate, the simple or concentrated solution of opium, seldom the discutient poultices, oftener the temporary blister and the antimonial ointment—form the basis of this treatment.

Rest, even confinement to bed, is particularly recommended. It is indispensable to patients attacked with glandular inflammation or ulceration, with phagedenic ulcers, with exostoses, with pains, &c.

3. *Internal Treatment.*—Few purgative medicines, unless with patients whose

digestive tube is sound; emollient oily laxative or purgative clysters; and general blood-letting when the symptoms are inflammatory.

4. *Drinks.*—They must be selected from the class of light, diluent fluids, decoctions of barley, liquorice, linseed tea, solution of gum, lemonade, milk and water, thin soup, &c.

These means are useful, not only in opposing the primary symptoms. They are equally beneficial in the treatment of simple or mercurial secondary affections, though they require being modified according to circumstances.

Treatment of particular Symptoms of Syphilis.—Inflammation of the glans (*Balanitis*) requires merely local cleanliness. It is seldom complicated, and it becomes well in the course of from six to twelve days.

Posthitis, or inflammation of the inner surface of the foreskin, considered by M. Desruelles, as a complication of inflammation of the *glans*, and more frequently with ulcers, sometimes with urethral inflammation, especially in men with narrow preputial aperture, or addicted to the abuse of spirits, often causes acute or chronic accidental *phimosis* or *phlebitis*.

General bloodletting M. Devergie regards as preferable to the application of leeches, which, applied to the excessively inflamed prepuce, might produce gangrenous points or ulcerations. Diet and rest are indispensable; tepid lotions, fomentations, and emollient injections slightly narcotized, useful. Leeches, if requisite, ought to be applied to the *perinæum*, the groins, and the *pubis*. The treatment is completed by resolvent applications.

Accidental Phimosis is acute, complete, or incomplete, or œdematous. It is always caused by inflammation of the prepuce and *glans* (*posthobalanitis*.) by ulcers of the *glans*, of the prepuce, by vegetations, and by acute urethral inflammation. The treatment varies according to the form.

The œdematous *phimosis* yields to astringent applications.

The inflammatory *phimosis*, if it resist the antiphlogistic treatment, rest and low diet, must be rectified by operation. The proceeding of M. Cloquet, which is as expeditious as others, and has the advantage of leaving no deformity after the operation, is preferred by M. Devergie. It consists in introducing a grooved sound into the preputial cavity, on a level with the *frenum*, and parallel to this membranous fold, and slitting the prepuce at its lower region. When the *frenum* is too short, it is divided by scissors.

Accidental *phimosis* after operation, treated by the external method, always heals a great deal more rapidly than by the rational method.

Inflammation of the parts forming the *penis*, as *phlebitis* of the dorsal veins of the penis, swelling of its lymphatic vessels, and abscesses in the substance of the penis, all demand simple treatment, and readily disappear without recurring, and without the employment of modifying agents.

Acute urethral inflammation (*urethritis*) actively treated by several applications of leeches along the canal and in the *perinæum*, aided by rest, general and local baths, diluent drinks, cold lotions at the first, subsides pretty rapidly. Balsamic potions, with aromatised turpentine, or a few doses of the balsam of copaiba, complete the treatment, which varies from fifteen to twenty or thirty days.

Chronic urethral inflammation, without pains, requires the employment of astringents, general and local, the dose and strength of which vary according to the constitution and idiosyncrasy of the patients;—cubebs, the potion of Chopart; copaiba in white wine, &c. are used in moderation. Injections consisting of sulphate of zinc even in the weak doses are less frequently employed to avoid swelling and contraction of the urethra, so common after local astringents.

Urethral inflammation produced by stricture, is treated by simultaneous cauterization and dilatation, or by scarifications; but still preferably by the forced catheterism according to the method of M. Mayor.

Inflammation of the bladder (*cystitis*) acute or chronic, requires the treatment to be varied according as the symptoms are more or less severe. The treatment of the acute state is well known. The chronic state, with abundant mucous discharge, M. Devergie successfully treats by injections of copaiba, less frequently by a weak solution of nitrate of silver.

Orchitis in the acute state yields readily to blood-letting, at first general, then local, to emollients and laxatives.

Chronic *orchitis*, whatever be the size or state of the tumour, subsides under

the following treatment. Local bleedings, hemlock with calomel, one part of the former to three of the latter, or pills of four grains each, given progressively from one to ten daily. When the gums are swelled it is requisite to act revulsively on the intestinal canal. With this treatment, which has been long employed at Strasbourg, and at the Val de Grace, where it was adopted by M. Gama, M. Devergie has been invariably successful. If chronic *orchitis* be not very inveterate, he opposes it by moderate local blood-lettings, repeated and alternated with saline oily purgatives.

Gangrenous Inflammation of the Scrotum, often induced under the influence of intense gastro-intestinal inflammation, was very frequent in the civil and military hospitals, where mercury formed the basis of treatment in venereal cases; but it is greatly less frequent where mercury is less lavishly administered. It belongs to the class of ordinary inflammations, and requires no particular treatment.

Ulcers of the Penis and of the Prepuce are in general all cured, whether simple or multiplied, in the course of from twelve to twenty-five or thirty days, by the rational method; while almost invariably they occupy under the mercurial treatment from twenty-five to forty days.

Emollient lotions, sometimes narcotized, baths local and general, low diet, the simple or opiate dressing, suit best in the first period. Subsequently lotions with vegeto-mineral water, solution of sulphate of copper, and slight applications of the nitrate of silver, complete the cure. These applications ought to be employed only every second day, always slightly and cautiously. M. D. states that he cannot refer to six patients annually to whom he has given mercurial preparations.

Chancres are healed with recurrence at the rate of from 85 to 90 per cent.

The cure of ulcers of the penis is often retarded by complications.

Phagedenic ulcers require prompt measures to act on the constitution, which is generally disordered previous to cohabitation or after contagion. In twenty-eight days ulcers of this species yield to simple treatment, to low diet, leeches applied to the ulcer, and solution of opium. Others have required from thirty-five to forty-five days; while by the mercurial and sudorific treatment the cure has taken place only at the end of fifty or sixty-five days. In some cases, however, in which the cure must have been tedious in patients not restricted to regimen, he allows that he accelerated the cure by mercurial frictions near the seat of the disease, and more readily by means of calomel.

Two patients of this unmanageable character were attacked in the hospital with secondary ulcers of the tonsils, for which sudorifics and mercurial frictions were employed.

Acute glandular inflammation (*Adenitis*) often complicates ulcers in soldiers and working-people who do not observe rest and low diet. The swellings are more difficult to cure, according as they are *supra* or *infra*-aponeurotic, and as the digestive canal is in an unhealthy state. The treatment consists in perfect rest, local and general baths, general and local blood-lettings according to the intensity of the symptoms, emollient fomentation, then narcotic applications. The regimen varies from low diet to moderate food, most frequently vegetable. It is more eligible to repeat the application of leeches than to apply many at once, in promoting resolution.

If suppuration cannot be prevented, the inflamed gland must be promptly opened in the direction opposite to the fold of the groin, to avoid sinuses.

When the skin is bluish, livid, or thin, it is best to open the abscess by the caustic potass.

Cases of Glandular inflammation treated by the simple method are rarely followed by secondary local accidents, as sinuses, fistulous passages, profuse suppuration, phlegmonous erysipelas, &c. On the contrary, it is not uncommon to see these accidents developed during mercurial treatment in damp wards, in patients predisposed; and to render the cure long and difficult.

When hypertrophy of the lymphatic glands causes them to project through the aperture in the skin, local bleedings often abate the enlargement, when they may be more completely reduced by burnt alum, sulphate of copper, or nitrate of silver. In the opposite case, excision in successive portions or entire, lozenges of

red lead, or the repeated application of potass in powder, is the best means, aided by low diet.

Indolent or chronic glandular inflammation, either primarily or secondarily acquired, he treats by means of local bleedings at first, then, in order to attempt resolution, by iodine preparations, mercurial frictions, the proto-ioduret of mercury, the volatile liniment, and, above all, the temporary blister. Of all these means, the latter is represented to be most rarely ineffectual. It sometimes requires to be renewed.

He has also employed comparatively concentrated solutions of bichloride of mercury, of sulphate of copper, of iron, with blisters, without more manifest results than by the blisters alone.

When, under these means, resolution of large indolent tumours is not effected, there remains the resource of the caustic potass applied along the course of the tumour. This produces copious suppuration, which destroys the inflammation of the gland; or every second day four or five leeches may be applied over the exposed glands.

Primary or secondary vegetations, are best and most certainly removed by excision, and then cauterization by a liquid caustic,—a method which he has invariably employed for years. The savine powder is not a contemptible remedy.

If the vegetations be numerous and have large bases, it is requisite to try local mercurial frictions, which sometimes make them decay and hasten their cure. But this is generally true of a small number of cases only. When they resist the means now specified, removal by the bistoury and cauterization are the only means of destroying them.

Vegetations and Excrescences at the verge of the Anus, generally disappear under the use of solution of opium, or fumigations of the black sulphuret of mercury, and slight cauterizations. When they are large, excision, and then the application of the acid nitrate of mercury or the nitric acid, constitute the appropriate treatment. Internal remedies, M. Devergie employs only for vegetations recurring, or complicated with other symptoms, either in the *fauces* or in the skin. He then begins with diluent drinks, low diet, and baths; next orders sudorifics in the shape of ptisan or syrup; and sometimes he has recourse to mercurial preparations when the cure appears to be tedious.

Secondary symptoms, improperly named constitutional, chronic, or mercurial, may all be referred to lesions of the lymphatic, mucous, cutaneous, fibrous, and osseous system.

The treatment of secondary lesions of the lymphatic system varies little from that specified for the removal of primary affections. It is the same as to the treatment of excrescences.

Ulcerations of the mucous membrane of the cheek, nose, bowels, and pharynx, whatever be their seat, their appearance, and their extent, are treated by low diet, slight, often repeated, local blood-lettings, emollients, general baths, and laxatives when the intestines are sound. The powerful modifying agents are not employed, unless the simple treatment pursued for a longer or shorter time have been unavailing. The preferable modifications are sudorifics, subcarbonate of ammonia, baths composed of sulphur, opium, hyoscyamus, &c. In general it is best to increase the action of gargles in proportion to the improvement, to touch the ulcerations frequently with hydrochloride water, solutions of sulphate of copper, nitrate of silver; and he has employed, though rarely, mercurial preparations to subdue these affections, especially in patients who have already undergone mercurial treatment, without obtaining a cure.

Affections of the cutaneous system. Syphylitic Eruptions, Tetters; Unguis; Gummata.—As there is neither in the kind of alteration of the skin, nor in the colour, nor in the seat of the eruptions, any circumstance which can certainly determine the cause from which they have proceeded, the simple treatment is the best for first adoption. With this, therefore, and with anodyne oleaginous lotions, M. Devergie always begins; then proceeds to modifications; then to bitters, depuratory medicines, ammonia, sudorifics, gelatinous and sulphurous baths. Sometimes he employs advantageously the bichloride of mercury, when the cure threatens to be tedious.

Gummata, Unguis, Rhagades.—These symptoms have become so rare since the systematic mercurial treatment has been abandoned, that for three years M. Devergie has seen only one example of *rhagades* after simple treatment.

Affections of the osseous system; syphilitic pains, periostoses, exostoses, caries, necroses.—These disorders he regards in the greater number of cases as the result of syphilis uncured or aggravated by mercury, in persons predisposed to gouty and rheumatic affections. Before having recourse to mercurial preparations, he represents it to be always necessary to employ soothing means of all kinds. Sometimes mercury in liniment with opium succeeds; sudorofics combined with opium or henbane, and subcarbonate of ammonia are mostly used by M. D. In inveterate cases the ptisans of Felts, Arnoult, or that of Pollini have always succeeded with him.

He adds that, for twenty years, he has employed either in the hospitals or in the city, a sudorific syrup, consisting of *guiac*, *Rumex Patientia*, burdock, *saponaria*, bitter-sweet, and fumitory, in equal proportions.—*Edin. Med. and Surg. Jour. and Archives Générales*, Nov. 1835.

OPHTHALMOLOGY.

34. *New method of forming artificial pupil.* M. Laugier, of the Hospital Neckar, has successfully operated for artificial by a new method, in the case of a man, 60 years of age, who had been operated on the preceding year for cataract of both eyes by another surgeon. The lenses had been extracted but with an unfortunate result. The coats of the left eye were collapsed and the sight of the right one destroyed by complete atresia of the iris, the cornea continuing transparent in its whole extent. The operations generally employed for artificial pupil are, it is well known, singularly unsuccessful. The vertical, transverse, or even crucial incision, hardly ever answers. The V incision of M. Maunoir generally gives rise to an effusion of blood which mars the rest of the operation; and as the cornea was throughout transparent in the present case, the detachment of the iris from the ciliary ligament was not to be thought of, as the new pupil would not have been central. M. Laugier therefore determined on dividing the cornea as for extraction, and then cutting off a portion of the iris, but on pushing through Richter's knife, the aqueous humour escaped, the iris became applied closely against the back of the cornea, and the point of the knife became engaged in the membrane; under these circumstances he thought it better to change the plan of operating; and having taken the depression needle, he introduced it through the wound in the cornea, and making it act as a lever, he succeeded in perforating the central part of the iris by laceration, with little effort, and without giving rise to any hemorrhage.

The operation was followed by some little pain and inflammation, accidents speedily combated by the usual treatment, and the patient now presents a large, quadrilateral, irregular, and nearly central pupil, and moreover enjoys the full power of sight. The only question which can be agitated here is, did the cataract needle act on the iris itself, or did it merely lacerate the adherences of the pupillary edge; the author thinks the latter, because a portion of the centre, which before the operation was pale and wrinkled, has now disappeared.

In whatever light we regard it, the operation deserves to be repeated in cases of atresia, after extraction or depression, when the cornea remains transparent: it is superior evidently to detachment after Scarpa's method: it is much more easily executed than excision, and is less liable to be followed by obliteration than incision.

A simpler method, and one we have had recourse to with success, is to penetrate the cornea with a needle instead of making an incision with a knife, and then finishing the operation as done by M. Laugier.

35. *Treatment of Fistula lachrymalis.* Dr. Edward Lubbock describes in the *Edinburgh Med. & Surg. Journal* for Oct., 1835, a knife which he has devised for opening the lachrymal sac and dividing the stricture in obstructions of this canal, which appears to possess advantages over the lancet or bistouries ordinarily employed for that purpose. The blade of the knife is 2¼ inches long, including the shoulder, and less than ⅛ of an inch broad. In shape it resembles a catling, and cuts upon both edges for the extent of half an inch from its point where the knife is thin; but as the thickness of the instrument increases towards the handle, the edges become too thick to cut easily; the groove extends exactly along the

centre of the anterior surface; the posterior surface is slightly convex, in order that the groove may be made as deep as possible.

When made according to this fashion, the length, together with the extreme narrowness of the knife, and its being precisely of the same width throughout, allow of its ready passage through the nasal canal, so that the point will fairly rest upon the inferior wall of the nostril, and the groove will be placed looking directly forwards, and most conveniently for the easy passage of the style, which, of course, is readily passed along it, every obstacle having been already overcome by the knife, the point of which has penetrated beyond the limits of the nasal canal into the inferior meatus of the nose. The operation is most easily performed whilst the patient is sitting on a chair, with his head leaning against the breast of the operator, who stands behind the chair, and directs the knife inwards, downwards, and a little backwards, whilst he keeps the lower eyelid stretched by the finger of the left hand applied upon the margin of the orbit. Should it be the right lachrymal sac, the corresponding eyelid is most readily kept tense by the aid of an assistant, provided that the surgeon is not ambidexter. When performed in this manner the whole operation is over in two or three seconds; the bistoury withdrawn, and the style safely lodged in the canal. The opening into the lachrymal sac, the division of the obstruction, and the passage of the style are all effected by one movement of the knife.

Dr. Lubbock has found it advantageous to use a pin long enough to rest upon the floor of the nostril, for in this manner we prevent the head of the style from sinking within the lachrymal sac, which, whatever be the shape of the head, whether flat like a nail, or globular, is always sooner or later followed by increased inflammation and suppuration. The length of the pins which Dr. Lubbock employs varies from 1 4-8 to 1⅞ inch; and in cases where the sac has become much distended by matter, and the surrounding parts have been much thickened by the effusion of lymph, he has in the first instance used them as long as two inches or 2¼ inches. The length of the duct varies in the same manner as the length of the face, which, when measured from the top of the nose to the upper *incisores*, is very different in different persons, and even in the same person. As the swelling subsides, a small piece will require to be cut off from the end of the style. But Dr. L. always prefers having it rather too long than too short, until the swelling and inflammation have completely subsided, when it may be made to rest accurately on the fistulous orifice.

As to the propriety of altogether omitting after a time the use of the style, Dr. L. thinks that it is best to discontinue its use gradually; as by taking out the style one hour on the first day, two hours on the second day, and so on.

---

36. *Traumatic Ophthalmia.* By Dr. Schindler. 1. *From Burns*, especially from the explosion of Gunpowder. Singeing at the eyebrows and eyelashes, the formation of blisters on the eyelids and their edges, more or less considerable vesications on the sclerotica and cornea, and grains of unignited powder fixed in the cornea, are the less serious effects of an explosion; while, in more severe cases, the destroying force manifests itself in laceration of the iris, separation of the iris from the choroid, laceration of the retina, or even destruction of the whole textures of the eyeball. Setting aside the severe cases in which the preservation of the organ is impossible, the bad consequences of burns of the eye are by no means in direct proportion to the extent of the injuries received. Considerable lacerations are sometimes followed by no permanent bad effects; while, in other cases, the mere dazzling of the eyes by the sudden flash of light, especially when the explosion takes place very close to the eyes, produces the most disastrous effects on the sight. Dr. Schindler is of opinion that, in the last mentioned cases, the over stimulation produces an erethismus of the retina, passing into chronic inflammation and ultimate blindness. The patient, in one case particularly referred to, saw perfectly immediately after the explosion, and congratulated himself that his eyes were safe; but a speedy irritability to light, degenerating into severe photophobia, accompanied with slight external ophthalmia and considerable lachrymation, was the forerunner of an amaurosis-erethica of the most dangerous description.

2. *From slight Injuries.* It sometimes happens, after apparently trivial injuries of the eyeball, as a small cut of the cornea, a painful degree of pressure on the eye, the eye being struck by a bit of turf, or the like, that there immediately

follows such a deprivation of sight, that the patient perceives objects only as if through a thick cloud, or that the eye even loses entirely its sensibility to light. There is no pain, and at first no appearance of inflammation. It is only after some days that a slight redness of the conjunctiva, and sometimes of the sclerotica, sets in. The pupil is black, but motionless, and either regularly or irregularly dilated. By and bye, the iris becomes inflamed, but the patient manifests no intolerance of light. Hypopium, if it occurs in such a case, may be removed; but the eye will, notwithstanding, always become atrophic, the cornea remaining quite clear, and only gradually shrinking. Mr. Lawrence refers such symptoms to laceration of the retina; but this opinion, grounded solely on the sudden loss of vision, does not appear sufficiently borne out. The nature of the injury scarcely admits, in some of the cases, of such an explanation, and seems to point rather to a paralysis of the ciliary nerves.

3. *From severe Injuries.* Another and a very different form of traumatic ophthalmia arises from similar, but much more severe, injuries of the eye. Dr. Schindler has seen it follow a penetrating wound of the cornea or a blow with the fist. The patient, immediately after the injury, sees quite well, has no pain, and the redness of the conjunctiva is inconsiderable. The pupil is black and circular, not distorted, but slow in its motions. After some time, iritis comes on with its usual symptoms: the pupil, however, is at first considerably dilated, it loses its natural colour, and even in a few days becomes of a fine sea-green, as in some cases of glaucoma. At the same time vision is extinguished. The cornea and the aqueous capsule do not in general suffer, so that the change behind the pupil is distinctly seen. Dr. Schindler considers it as impossible to decide whether that change depends on an alteration of the choroid pigment or of the vitreous humour. If, in the progress of the case, the cornea and its lining membrane should become nebulous, the change of colour in the pupil can be perceived only so indistinctly that the observer will be at a loss whether to attribute it to cataract or to exudation. He will recognise his mistake, however, as soon as the cornea again clears. The iritis, in such cases running a subacute course, is attended with but little pain, and seldom produces any puriform effusion. After some weeks, the contracted pupil is closed by exudation, and of course all further observation of the deep-seated textures of the eye is prevented. This form also of traumatic ophthalmia always ends in atrophy, although Dr. Schindler acknowledges he long flattered himself that in such cases he might have preserved at least the form of the eye.—*B. and F. Med. Rev. July*, 1836, *from Zeitschrift für die Ophthalmologie, B. v. H.* 1. 1835.

—

37. *On the Power of Nature in Curing severe Diseases of the Eye.* By Dr. Lorch.—Case I. *Closure of the Pupil, with subsequent Restoration of Vision.* This seems to have been originally a case of scrofulous ophthalmia: three ulcers of the cornea formed, followed by three protrusions of the iris. These degenerated into a staphyloma racemosum, the pupil closed, and vision was lost. Calomel and senega were administered, the latter being a remedy much spoken of by some German practitioners in affections of the cornea; blue ointment, with belladonna, was rubbed in round the eye; and, after salivation took place, the patient took camphor and opium. The redness and pain abated, but the pupil continued closed. After some weeks, during which Dr. Lorch did not see the patient, (a girl of thirteen,) she began to see, and could at length read with the bad eye. He scarcely believed it; but found, on examination, that the three prolapsed bits of iris had quite shrunk, that three leucomata had formed, and that between these there was a small motionless pupil, opposite to which the cornea was luckily clear. An engraving illustrates the appearance of the eye.

Case II. *Dislocation of the Lens, with Recovery of Sight, without operation.*—This is the case of an English boy, of seven years of age, residing at Geisenheim, in whom the left crystalline capsule burst in consequence of a fall on the back of his head. The pupil was expanded and fixed, and the lens changed its place on every motion of the head. At first it was transparent, and its edge was seen to glance like a diamond. When the patient leaned forward, the upper third of the lens fell into the anterior chamber, while its lower edge rested on the dilated pupil; when he bent the head back, the lens fell again into its natural place. In the former position the patient saw better. At length the lens grew opaque, and sight became proportionally diminished.

[Dr. Lorch considers this case to have been one of capsulo-lenticular cataract; but we must confess that the proofs that the capsule was in this stage opaque, or that it was afterwards absorbed, do not appear to us satisfactory.]

Dr. Lorch administered small doses of calomel and sulphate of quina, and rubbed in mercurial salve round the eye. He seems to have been contemplating extraction, when the lens sunk down into the posterior chamber, and was gradually absorbed. The upper half of the pupil cleared first, vision improved, and at length the patient was able to distinguish the letters of a book. What is remarkable, the right eye seemed to be becoming like the left, when the patient left Germany for England.—*Ibid.*

38. *Reproduction of the Cornea.*—Dr. Buck relates in *Rust's Magazine* (Vol. 45, No. 1,) the case of a young girl operated on for staphyloma, which occupied the whole cornea, and projected enormously between the lids. By cold applications, diet, &c., inflammation was prevented, and in three weeks the cornea was replaced by a layer of lymph, flattened instead of convex, shining and smooth, adherent to the iris, semitransparent and allowing the patient to distinguish the outlines of objects. With care such a result might not unfrequently be obtained in cases of staphyloma.

SURGERY.

39. *New Self-guiding Catheter.*—At a late meeting of the Westminster Medical Society, Mr. Costello exhibited a new catheter which had been used frequently by himself and other medical men, and found to be a great improvement on the instruments generally employed in catheterism. It is constructed with a greater consideration of the form and peculiarities of the urethra than the old catheter. The most desirable qualities for a catheter Mr. Costello said he had thought should be, 1st. A volume in full proportion to the calibre of the urethra. 2nd. Such a shape that the space in advance of the old instrument, and produced by it, shall be occupied by a small directing prolongation, of the point of the new one, having an inclination to the upper surface of the canal. 3d. On its under surface the shape between the tip of the small prolongation, and the part at which its full diameter is restored, should be such as to accommodate itself to the depressions, as it passes them, also depressing and flattening the eminences on the under surface of the urethra as it passes over them. 4th. Eyes not too large, and so placed as not to present any obstacle to the progress of the sound, by plugging or stopping up with the lining membrane of the urethra. To fulfil these conditions, the self-guiding catheter was constructed. It is similar in form to the common catheter, except from the eyes to the termination of the beak, in which portion its shape is entirely different, consisting of a neck, a head, and a beak, strongly resembling the neck, head, and bill of a swan. "When passed into the urethra," observed Mr. Costello, "the bulk of the head is sufficient to unfold the membrane in advance of it; the bill occupies the vacant space thus made, and continues to move along slowly, in contact with the upper surface of the urethra, from which its extreme point is so fashioned as to incline slightly towards the axis of the urethra. When it arrives at the bulb, the bulk of the head occupies the depression, while the guide or bill is necessarily directed into the middle of the isthmus, or the commencement of the *fixed* portion of the canal; the pavilion being now gently lowered, the bulk of the head ascends out of the depression of the bulb, and, favoured by the inclined plane in which the head and bill are blended together, glides imperceptibly over the sill formed by the under edge of the triangular ligaments. It moves on freely through the muscular portion until it reaches the prostate; here again the guide, keeping close by the upper surface, overtops the eminence of the vero-montanum, and, depressing it, leads the head of the catheter gently over it. The bill then enters the bladder at the upper part of its orifice, making way for the head of the catheter as it had done throughout the whole of its passage. The chief peculiarity of this catheter consists in the fidelity with which its upper surface keeps to the upper surface of the urethra, while the bulk of the body tapering upwards to the end of the bill, successively

unfolds the depressions, and climbs upon the eminences which it meets in its course along the inferior surface of the canal."—*Lancet, April* 16, 1836.

40. *Lecture on Corns and Bunions.*—The following extract from a lecture by Sir BENJAMIN BRODIE, on an humble but important subject, will be read with interest and advantage.

A corn is in the first instance a thickening of the cuticle. Whenever the cutis is habitually subjected to the influence of pressure, it secretes a thick and horny cuticle. We find examples of this in the hands of many mechanics, and in the soles of the feet of those who walk much. But every thickening of the cuticle is not a corn, and this name is applicable only to those cases in which the cuticle is thickened over a projecting portion of bone, on which the pressure is, as it were, concentrated. Corns may occur in any part of the body in which this combination of circumstances exists; but, for obvious reasons, they are met with in the feet much more commonly than any where else.

If shoes were constructed of the shape of the human foot, neither too large nor too small, and making an equal pressure every where, corns and bunions of the feet would never exist. But, unfortunately, shoes are seldom made after this fashion, and in ladies' shoes especially there are generally two signal defects: first, the extremity of the shoe is much too narrow for that part of the foot (namely, the toes) which it is to contain; and, secondly, for the purpose of displaying as much of the foot as possible, the whole of the tarsus and metatarsus is left uncovered, and the pressure of the shoe in front is thrown entirely upon the toes. The toes are thus squeezed against each other, and then pushed out of their natural position; and all the projecting points, chiefly where the joints are situated, are pinched and tormented either by the neighbouring toes or by the leather of the shoe, and thus it is that corns of the feet are generated.

In order that you should understand the precise situations in which corns are most likely to take place, you must consider more particularly the effects, which the pressure of the shoe produces on the toes. The little toe is pushed from its parallel position, so that it is in fact underneath the fourth or adjoining toe, and corns are generated on its outer surface over the prominences of its joints. A corn is also frequently met with in the angle between the little toe and the next toe, where the first phalanx of the former is pressed against the head of the metatarsal bone supporting the latter. Sometimes the consequence of wearing a very narrow shoe is, that one of the toes (and it is generally the second or fore-toe) is pushed upwards, so that it lies over the two adjoining toes, that is, over the great toe and the third toe, the extremities of which come in contact underneath; then the leather of the shoe is drawn tight over the upper surface of the second or displaced toe, and corns are produced over one or more of its articulations. At other times one of the toes (and in this case also it is generally the second toe) is displaced in another way. The extremity of it is pushed downwards, so that it lies beneath the extremities of the two adjoining toes, which come in contact over it. But this change cannot take place while the three phalanges of the displaced toe remain in a line with each other. The first and second phalanx make an angle, projecting upwards. The second joint of the toe becomes prominent above, and a corn is formed over it. If the shoe, instead of being too narrow, be too short, for the foot which it contains, the last phalanges of all the smaller toes are kept constantly in a half bent state, and a row of corns is generated, one being situated on the upper part of the last joint of each of these toes. I have endeavoured to enumerate what may be regarded as the most ordinary localities of corns; but of course they may be produced any where else, according to the shape of the shoe, the mode of walking, and other circumstances.

I have said that a corn is, in the first instance, a thickening of the cuticle secreted by the cutis, when it is kept in a state of constant irritation by the operation of external pressure squeezing it against a prominent surface of a bone. But a complete corn is more than this. A bursa, or bag of synovial membrane, similar to those bursæ which are of original formation, but of a very small size, is formed between the thickened cuticle and the cutis; and it is this combination of thickened cuticle, with a subjacent bursa, which constitutes a perfect corn. This is a

fact which you may easily verify for yourselves, as the opportunities of dissecting corns are abundant in the dead house of the hospital.

The thickened cuticle of those corns, which are situated externally, becomes dry, and hard, and horny; while that of the corns which are situated between the toes remain soft, and to a certain degree moist; and this gives rise to the distinction between hard and soft corns. I shall speak to you of hard corns first—of soft corns afterwards.

A hard corn, when it begins to be formed, is productive of no other inconvenience than of a slight degree of pain and tenderness after much exercise. The pain and tenderness increase, so that the patient in the evening is glad to take off the leathern shoe, and put on a large slipper. Then the whole foot, after exercise, is hot and uneasy. These symptoms subside with rest, and the absence of pressure, during the night, but return with the wearing of the shoe and exercise during the day. By and bye the bursa under the horny cuticle becomes inflamed, and distended with fluid, and the pain is much aggravated. But the sufferings are greatest in those cases in which the bursa suppurates. An abscess forms in parts which are incapable of distension, and you know how much mischief even a very small collection of pus, under such circumstances, may occasion. I was sent for to an old gentleman who was suffering excruciating pain in the whole foot, which was red, and much swollen, the swelling extending up the leg considerably above the ankle. In one toe, and in the neighbouring part of the foot, the tenderness and other marks of inflammation were greatest, and here I discovered an old neglected corn. He could scarcely bear the corn to be touched; however, I carefully removed the hard cuticle with a scalpel, and made an opening into the bursa under it. Not more than a drop of matter escaped, but this was sufficient to give immediate relief. On the following day he was well. I was desired to see another patient, a young lady, under the same circumstances, except that the symptoms were more severe. The inflammation involved nearly the whole leg, and there was a frequent pulse and much general excitement. I removed the thickened cuticle of a corn on one of the toes, and allowed a very small quantity of pus to escape which was collected beneath it. This gave immediate relief, and on the following day she was all but well. Several similar cases have fallen under my observation.

I have already mentioned that the most common seat of a soft corn is in the angle between the little toe and the fourth toe, over the head of the metatarsal bone which supports the latter. Occasionally, however, a soft corn occurs elsewhere—as, for example, on the inside of the little toe, opposite to the last joint of the fourth toe. Such corns are even more painful than hard ones, except when suppuration takes place in the bursa, and then the suffering is less in proportion, as the thickened cuticle of a soft corn admits of distension more easily than that of a hard corn.

Under ordinary circumstances, it is easy to give temporary relief to a patient who suffers inconvenience from a hard corn. The thickened cuticle should be removed, so as to lessen the pressure on the parts below; and this may be accomplished in various ways. *First:* If the corn be of long standing, and a piece of linen or thin leather, spread with some mild plaster (diachylon for example), be applied, and worn over it, it will sometimes exfoliate or separate without further trouble. *Secondly:* The corn may be rubbed with the nitrate of silver, or (which is indeed preferable) concentrated nitric acid may be applied by means of a probe armed with lint. The texture of the cuticle being thus destroyed, exfoliation will take place, so that in the course of a few days the corn may be readily peeled off. *Thirdly:* The corn may be reduced in thickness by scraping its surface with a very fine steel or fish-skin rasp. And, *fourthly:* The corn may be removed by means of a fine cutting instrument. This last is the shortest and simplest method; and the patient may keep himself in a state of comfort by procuring the assistance of a dexterous chiropodist at stated periods, who will perform this operation for him better than he can perform it for himself.

With a view to a permanent cure, however, it is necessary to have recourse to other methods of treatment. In some way or other, all undue pressure must be removed from the part on which the corn is situated. *First*, the shoe must be made as nearly as possible to the shape of the foot, and it must cover the metatarsus and a portion of the tarsus, so that the whole pressure may not be thrown

on the toes; or a boot made to be laced or buttoned may be worn instead of a shoe. In some cases it is advisable that the shoe or boot should be made, not of ordinary leather, but of very soft and flexible buckskin, or of cloth. A material for shoes and boots is sold under the grandiloquent name of *pannus corium*, which answers the purpose intended in these cases very well. It is really a kind of cloth, but it has the appearance of leather, and is very soft and pliable. *Secondly*, if any of the toes are displaced in any of the ways which I have before described, we must endeavour to restore them to their natural position. In young persons this may be generally accomplished. A contrivance made use of by the bandage makers is very useful on these occasions. It consists of a thin plate of metal covered with thin leather, or a piece of strong leather, fitted to the lower surface of the foot; not to the whole of the surface, but extending from the extremities of the toes nearly to the farsus. Slits are formed in this plate of metal or leather, and tapes are passed through these slits, forming loops above, by means of which the toes are bound down and retained in their proper places. In many cases the same object may be attained by simpler means. A strip of linen, spread with adhesive plaster, about two-thirds of an inch in breadth, may be passed over the toes which are too elevated, and under the others, the extremities of the plaster being made to cross each other over the metatarsus. If this be neatly applied, it will keep the toes parallel to, and on the same level with, each other. Whichever of these methods be employed, it is necessary that it should be persevered in for a considerable time. In older persons, in whom the toes have been long displaced, they have sometimes become so adapted to their unnatural position, that it is almost needless to attempt to alter it. Under such circumstances we are sometimes compelled, in hospital practice, even to amputate one of the toes, in order that the patient may not be disabled from gaining his livelihood; and this may be occasionally necessary even in private practice. A young lady of rank suffered from a displacement and a distortion of the second toe, such as I have already described. The extremity of it lay under the extremities of the two adjoining toes; the second and third phalanges were nearly anchylosed at a right angle to each other, and a corn was formed on the second joint, where it made a considerable projection above. She applied to me to amputate this offending toe. I answered, "that I would do no such thing; that I might do it for a labouring person, but that her case was entirely different, as she had not to earn her livelihood by her bodily labour." She replied, "You seem to treat the matter very lightly, but this toe and corn make my life miserable: I can take no exercise, I am unfitted for society, and I have tried all other methods of relief without success." On inquiry, I was satisfied that she in no degree exaggerated her sufferings, and I therefore complied with her wishes, and amputated the toe at its first joint.

A very simple, but scientific, method of relieving, and indeed of curing, corns, is practised by the chiropodists. A piece of buckskin leather, spread with some adhesive plaster, is applied on the toe on which the corn is situated, there being a hole in the leather corresponding to the corn. Thus the pressure of the shoe is taken off the corn, and thrown on the surrounding parts. If this be kept constantly applied, and proper shoes be worn at the same time, the corn will gradually disappear.

In some cases a hard corn is formed on the lower surface of the foot, over the head of one of the metatarsal bones. A corn in this situation is especially troublesome, rendering the patient absolutely lame; but it may be relieved or cured by the method which I have just explained, only one slight modification of it being required. The hard cuticle being removed, a broad piece of buckskin leather is to be applied, having a hole in it where the corn is situated. But a thin piece of calico spread with adhesive plaster, and having no hole in it, is to be applied first; that is, between the leather and the foot. Without this last contrivance the flesh of the foot, when the patient walks, bulges or projects into the hole of the leather, so as completely to fill it up, and the patient's condition is rendered rather worse than better. The calico with adhesive plaster prevents this inconvenience, at the same time that it does not prevent the leather answering the intended purpose of taking the pressure off the corn, and throwing it on the surrounding parts. I may observe, by the way, that the same method is applicable to some other affections of the lower surface of the foot, as well as to corns.

When abscess is formed in the bursa under a hard corn, the treatment to be em-

ployed is very simple, although the relief it affords is immediate and great. You are to pare off the hard and thick cuticle, and open into the bursa, so as to allow the small quantity of pus which it contains to escape. Thus the corn is effectually destroyed, both the cuticle and the bursa; and it is very easy, by means of the expedients which I have just recommended, to prevent it being regenerated.

The treatment of soft corns is to be conducted on the same principle with that of hard corns; some modification of it only being required, on account of their peculiar texture and situation. The thickened cuticle may be removed by means of the concentrated nitric acid, applied so as to penetrate into its substance, but not to the parts beneath. This destroys its texture, causing it to become dry and shrivelled; and in the course of a few days it begins to exfoliate, and is then readily peeled off. If an abscess forms in the bursa of a soft corn, it should be treated in the same manner as that in the bursa of a hard corn.

In some cases, even though there be no abscess underneath, a soft corn becomes exquisitely sensitive, so that the patient cannot bear it to be even touched; and he is made as lame as if he suffered from the gout or any other painful malady. Such a case fell lately under my observation, which I mention, not because it was peculiar, but because the sufferings of the patient were unusually severe. There was a broad soft corn on the side of one toe, where it came in contact with the side of the adjoining toe, and not in the angle between them. The patient could scarcely walk, even with a loose slipper, and the corn itself was so exquisitely sensitive, that the slightest touch could not be borne. This state of things had existed for many weeks, the corn itself being of a much earlier date. I applied the strong nitric acid until I had reason to believe that it must have penetrated through the thickened cuticle. An increase of pain followed the application, and continued for some hours. On the following day there was a manifest improvement. I was now enabled, without any difficulty, to remove the corn with a fine scalpel. The recovery of the patient was immediate and complete, so that, having been previously quite lame, he was enabled in less than twenty hours to walk as well as ever.

The first thing to be done for the permanent cure of a soft corn is, that the patient should be provided with a shoe of a proper shape, and that the toes which are in any way displaced should be brought back into their proper position. Now I have already observed that the most common situation of a soft corn is between the fourth toe and the little toe, over the head of the fourth metatarsal bone, and that in this case the little toe, towards its extremity, is always pushed more or less underneath the second phalanx of its neighbour. You will sometimes succeed in bringing the little toe to its proper place by means of a strip of adhesive plaster, applied round it in the manner of a loop, and then encircling the foot.

In other cases you will find the following method more convenient than that which I have just described:—A piece of *very thick* buckskin leather, spread with adhesive plaster, is to be applied on the inside of the little toe, so as to occupy the whole of the inner surface, from the apex to the second joint. The leather should be cut so as to be thin at its margin; and it should be sufficiently broad to admit of being doubled over a good part of the upper and under surface of the toe, as well as its extremity. This contrivance will keep the little toe at some distance from the next toe, and prevent it from sliding again under it. If both of these expedients fail, the patient must be content to wear for a time the metallic or leathern plate, with loops of tape for inclosing the toes, which I have already described.

The bunion which is frequently formed on the inside of the ball (as it is called) of the great toe, differs in some respects from the disease of which I have hitherto spoken.

The great toe ought to be in a line with the metatarsal bone, by which it is supported. But a shoe which is too narrow at its extremity, causes it to incline towards the outside, displacing, in a greater or less degree, the toe next to it, as I have explained already. In some cases, the effect of pressure on the great toe is actually to alter the position of the joint between it and the metatarsal bone; a portion of the articulating surface on the extremity of the latter being absorbed, and a new articulating surface being made to supply its place more externally than the old one. The existence of these changes I have ascertained by dissection. Now, the consequence of all this is, that the head of the metatarsal bone

makes an unnatural prominence, and is more acted on by the pressure of the shoe than it would be otherwise. The cuticle becomes thickened, not at one particular point, but over a considerable surface, and underneath the skin a large and very distinct bursa is generated between it and the bone. The difference between what I have now described and a common corn, may reasonably be attributed to the large size of the head of the metatarsal bone, and to the consequent diffusion of the pressure over a broad surface.

When a bunion is once formed, the bursa belonging to it is liable to become inflamed after any unusual degree of exercise, or on it being subjected to the pressure of a more than commonly tight shoe. Serum is then effused into the cavity of the bursa; the swelling is much increased, and it becomes at the same time exquisitely painful and tender. If the patient remains at rest, the inflammation subsides, the serum effused into the bursa becomes absorbed, and the additional swelling disappears without any further ill consequences. If, however, he continues to walk about, wearing at the same time a tight shoe, the inflammation proceeds further; suppuration takes place, and an abscess is formed. Such an abscess is slow in reaching the surface, and the patient generally suffers severely before it bursts externally; and when it has burst, as the synovial membrane of the bursa granulates with difficulty, the healing of the abscess is very tedious, the parts remaining all the time in a very irritable and painful state.

For the relief of this bunion, when it is free from inflammation, or inflamed only in a slight degree, the following plan of treatment should be adopted:—The patient should be provided with a shoe of sufficient dimensions, of a proper shape, and made of cloth or a soft and pliant leather. A piece of thin calico, spread with diacylon plaster, should be applied over the bunion, covering also some of the surrounding parts; and over this he should wear a piece of thick buckskin leather, spread with adhesive plaster, and having a hole in it, corresponding in size and figure to the bunion from which it is intended to remove the pressure. If the bursa be much inflamed, the patient should be confined to the couch, without a shoe: leeches may be applied in the neighbourhood, and warm fomentations may be employed also. If an abscess be formed, it should be freely opened with a lancet. For some time after the abscess has been opened, no other treatment is required than the application of a poultice, which may be changed afterwards for calamine cerate, or some other simple dressing. Perhaps the abscess may now gradually heal, and no other treatment may be required; otherwise it will be necessary to destroy the inner secreting surface of the bursa by means of some kind of caustic. The concentrated nitric answers this purpose very well. The end of a dressing probe may be armed with lint, then dipped in the acid, and applied for a few seconds to the internal surface of the bursa. A thin slough will, of course, be formed, on the separation of which it may reasonably be expected that the remains of the bursa will contract and granulate: otherwise the application of the caustic must be repeated.

After what I have already said, it is needless for me to trouble you with any observations as to the means which should be adopted for the purpose of preventing the bunion being regenerated.

A case came lately under my observation, in which what appeared like a bunion on the inside of the ball of the great toe contained an albuminous substance, of the consistence of the vitreous humour of the eye, similar to that which is found in the ganglions, which occur in the neighbourhood of the wrist and in some other situations. Whether this was an ordinary bunion, in which the vessels of the bursa secreted this peculiar substance, or whether it was really a ganglion, I was unable to determine. The treatment which I adopted was that of opening the cyst freely, and applying the concentrated nitric acid to its inner surface. It was necessary to do this with some caution, lest I should injure the joint or bone underneath; and therefore several applications of the acid were required. My object was to destroy the secreting surface, and obtain a granulating surface in its place; and when I last saw the patient, previously to her returning to the country, I had reason to believe that I had succeeded: but I have not heard of her since.

A tumour is occasionally formed on the instep, which, though not exactly a corn, bears a near relation to it. It is met with in young men who wear tight boots, and the usual situation of it is over the articulation, between the internal cuneiform bone and the metatarsal bone of the great toe. The tumour is under the skin, hard

and immovable, so that it seems to a superficial observer to be an enlargement of the bone itself. The skin over it is in a natural state, except in cases of long standing, in which the cuticle becomes somewhat thickened. I have had no opportunity of dissecting the parts affected with this disease, and am uncertain, therefore, whether it be formed in the ligaments of the joint or periosteum, or in the ultimate fibres of the tendon of the tibialis anticus muscle, or in what other texture.

Such a tumour is productive to the patient of as much inconvenience as a corn, and it requires the same kind of treatment. He should, for a time, leave off boots altogether; or if he cannot do this, the boot-maker should be directed to provide a last with a projection in that part of it which corresponds to the situation of the tumour, so that the boot may not exercise any pressure on it. A piece of thick buckskin leather, with a hole in it to receive the tumour, will also give the patient immediate relief, and ultimately effect a cure: but the cure, of course, will not be permanent, if he continues to wear tight boots afterwards.

I have seen a tumour apparently similar to that I have now described, in schoolboys, situated over the head of the tibia, at the insertion of the tendon of the extensor muscles, commonly called the ligament of the patella, and apparently the result of kneeling, or clambering on the knees: and a tumour of the same kind is sometimes met with on the inner condyle of the femur in those who ride much on horseback. In either case, the avoiding pressure is sufficient to relieve the patient of all the inconvenience which the disease produces. I have known cases, however, in which there have been some remains of a tumour over the head of a boy's tibia ever afterwards.—*London Med. Gaz.* 13 *Feb.* 1836.

—

41. *Anomalous case of Lithotomy.*—By Professor Lizars. Jas. Brown a healthy looking man, fifty-nine years of age, entered the hospital on the 29th December last, and presented the usual symptoms of stone in the urinary bladder, under which he had laboured during the last eight months. He had been in this hospital seven months ago under the late Professor Turner, who sounded him, but detected no calculus. The day after his admission he was carefully sounded, but no stone was felt; the bladder was rough and fasciculated. He was ordered warm baths, leeches to the region of the pubes, the mistura aquæ potassæ, the uva ursi, and a seton over the pubes. By these means all irritation having been subdued, he was again sounded, and a stone distinctly perceived. A dose of castor oil was administered; and on the following day the lateral operation was performed.

All the preliminary steps having been taken, and the existence of a calculus again ascertained, a large staff was inserted, which could not be made to pass the prostatic portion of the canal. A smaller staff was next employed, which apparently entered the bladder, as its handle was loose and moveable. One of my colleagues held it over the pubes, whilst I commenced, and cut down to the membranous portion of the urethra. I then proceeded seemingly through the left lobe of the prostate gland, which was hard, cartilaginous, and studded with calcareous deposition. The left fore-finger, which guided the lithotomy knife, seemed to enter the urinary bladder, and a little fluid, considered to be urine, flowed out, when I begged the staff to be withdrawn. I next inserted a pair of forceps; but instead of a calculus such as the sounding had led me to expect, I discovered nothing but calculi, varying in size from that of a millet-seed to that of a pea. I now used a searcher, but was not more fortunate. My finger felt a pouch equal in magnitude to a urinary bladder, which contained numerous small calculi. One of my colleagues, at my request, introduced his finger, and the sensation communicated so nearly resembled that of a mucous membrane, that he suspected I had wounded the rectum, but convinced himself of the contrary by examining that viscus with the fore-finger of his other hand. Another of my colleagues was also requested to examine, and he, with a scoop, removed some of the small calculi already mentioned.

I now inserted a catheter, which passed the entrance of this pouch, got into the bladder, and urine flowed out. The catheter was replaced by a staff, along which the knife was carried through the neck of the bladder, as there was no substance like prostate gland, and a stone of the size of a flattened plum was instantly extracted.

The first incisions into the pouch occupied about one minute. The second incision and extraction of the calculus about another minute. From fifteen to twenty minutes were spent in examining this pouch.

The patient has had no bad symptom—no case of lithotomy ever went on more favourably—and this is now the tenth day from the operation.

The anomalous pouch, which rendered this case so complex, seems to me to have been nothing more than the external fibrous capsule of the left lobe of the prostate gland gradually dilated, until it became as large as the bladder itself.

Crosse, in his work on Urinary Calculus, p. 34, says, "Concretions in the prostate gland, commencing in its ducts, often at a distance from their urethral orifice, even at the very bottom of a duct, go on increasing until each duct is enlarged into a pouch, rendering an escape of the concretion into the urethra impossible; the narrow orifice by which the pouch communicates with the urethra becomes often closed, in consequence of inflammation and effusion of lymph; the pouch is a secreting cavity which furnishes additional deposit; and as the concretions enlarge or multiply, the pouch enlarges in the direction of where there is least resistance towards the lateral or posterior surface of the prostate gland."

Wilson, on the Urinary Organs, at page 353, also observes, "I have met with a urinary calculus larger than a common sized olive in a cavity of the prostate gland, where, from the orifice which first admitted it having contracted, or the size of the calculus having enlarged, the stone could not be pressed back into the urethra, and the whole of the prostate gland had been changed into a capsule surrounding it."

I possess a preparation in my museum with cysts exterior to the urinary bladder, one of which may hold from four to five ounces. These communicate with the bladder. Another preparation where the right lobe of the prostate gland forms one capsule.

I confess freely that I was not prepared for the complication just described, nor am I ashamed to confess it, since no mention is made of such an anomaly in the writings of the most eminent surgeons, if we except Crosse and Wilson, from whose works I have quoted above, but which I had not seen.—*London Medical Gazette*, Feb. 6, 1836.

—

42. *On the employment of Sheet Lead, as an application to Wounds and Ulcers.*—M. Reveille Parise informs us that when he was with the French army, at the famous siege of Saragossa, in 1808—9, the supply of medical stores for the wounded had been altogether expended, and that he was obliged to have recourse to a variety of substitutes for lint, plaster, and other dressings. Under these circumstances, he happily thought of using thin sheets of lead, which had the double advantage of being easily procured (by beating out common musket-bullets,) and of being easily kept clean. Fortunately, too, this novel dressing was found to promote the cicatrization of many wounds. The plates must be as thin as a sheet of writing-paper, and uniformly smooth, especially where they are applied to raw surfaces. It may be supposed that they are apt to become uneven and wrinkled, and that thus they must rather irritate the wound or ulcer; but this objection applies rather to their misuse than to their proper employment. If they are secured in their place by bandages, well put on, it will be found that the lead-dressings are as smooth and comfortable to the patient's feelings as lint or any plaster. But it is not our present intention so much to recommend them to the exclusion of the ordinary applications, as to suggest their use as a most convenient and economical substitute on certain occasions. The expense of hospitals for the mere article of lint is very great; and, in time of war, it is not very easy to maintain a constant supply of it. The quality too of lint, in the present day, is exceedingly variable, a large proportion being uneven, knotty, and, from being bleached by the use of chlorine, apt to be irritating to the tender surfaces of wounds. When the discharge from a sore is scanty, the lint dressing often adheres to the edges of the wound, and there is difficulty in removing it; and, when it is more profuse, the lint is apt to form, at one part, quite a bag of matter, which is thus prevented from an easy escape. However indispensable, therefore, lint may be on the whole in the practice of surgery, it

cannot be denied that it has its advantages, especially when the supply is not abundant, or the quality is not the very best.

The manufacture of this article has of late very sensibly diminished, in consequence of all the linen rags being eagerly bought up by the paper manufacturers, and also of cotton cloths having come so much more than formerly into general use; "le prejugé (adds our author) ridicule qui faisait regarder comme malsain de se servir de draps de coton, et d'envelopper les enfans dans les langes de cette substances disparait journellement." In consequence of the increased price of good lint, a variety of substitutes have been proposed. One of these is a fine sort of tow prepared in a particular manner, and to which the name of "charpie vierge" has been given by the French surgeons; but the trials which have been made of this substance are quite unfavourable to its adoption. Should the lead plates be found by others to be as useful as M. Parisé assures us they have been in his practice, he will have the merit of having introduced a very ingenious improvement into surgery. To prevent any misconception of his proposal, be it remembered that he recommends the use of the sheet-lead only to such solutions of surface as are in progress to cicatrization, and not to recent or to spreading wounds. The ulcers to which the sheet-lead dressing is best suited, are those which are superficial and granulating, whose surfaces are covered with a layer of fibrino-purulent matter, and whose edges are red and even; in short, such as are healthy, and have a natural tendency to heal of themselves, if protected from all sources of external irritation. On the other hand, for ulcers which are deep, irregular, and painful, or of which the discharge is very profuse, we must have recourse to poultices, or other appropriate dressings, until the signs of incipient cicatrization make their appearance, and then the sheet-lead may be used with the best hopes of success. The large superficial wounds caused by some burns and vesicatories, especially in young children, are admirably suited to this mode of dressing. Most surgeons will acknowledge that these apparently simple sores have often baffled them most teasingly; when the ordinary applications seem to be useless or hurtful, recourse should be had immediately to the sheet-lead. It ought to be secured in its place by compresses and bandages, or by strips of adhesive plaster.

The softness and pliancy of the metal enable the surgeon to give the plate any shape he may wish, and to cut it as he would do a piece of paper. It is perfectly innocuous, the protoxide of lead being well known, under the name of litharge, as a common application to raw surfaces. We do not, by this remark, mean to imply that the lead plate acts in any other manner, than as a means of mechanical defence and support.

M. Parisé has tried sheets of tin, silver, and gold, and he has found them all succeed nearly equally well, provided they be made perfectly smooth, and applied so evenly and uniformly, that no irritation is induced; but, in point of ductility, the lead is greatly superior to tin, and its cheapness recommends it before the others.

That greasy applications are positively injurious to some ulcers, will not be disputed by any surgeon. How often do we observe that mere abrasions of the skin, situated over superficial bones, as the tibia, are obstinate and most troublesome of cure, and that all the ordinary dressings seem to do rather harm than good. If we apply dry lint, or use poultices or lotions, in the former case, the sore is apt to be fretted by the lint adhering to it, and in the latter, the disposition to heal often appears to be interrupted. Under such circumstances, the use of the lead plate will be found to be at once most simple and efficacious.

A gentleman, while descending a staircase, wounded his heel against the sharp edge of one of the steps: the wound was small, and quite superficial, and instead of healing in the course of a day or two, as was expected, it remained open for several weeks, in spite, or perhaps rather in consequence, of a variety of ointments and plasters, which were successively tried. The patient annoyed that so trifling a wound baffled so much "doctoring," dressed it of his own accord with dry lint; but this would not do; the lint stuck to the edges of the wound, and confined the discharge, and the sore became deeper and larger than ever. M. Parisé's advice was now taken. A piece of smooth and very thin sheet-lead was laid on the wound, and kept in its place by two or three slips of plaster. Under this simple dressing, repeated for several days, the wound very speedily healed.

Every surgeon must have experienced occasionally a most troublesome delay in curing ulcers, or indeed simple abrasions of the skin over the olecranon, spine of the tibia, malleoli, &c. As a general rule, we should dissuade the use of greasy or adhesive plasters, or even of dry, or wetted lint in such cases; and advise the patient merely to cover the injured part with a piece of sheet-lead, or of any other equally simple and innocuous application, such as gold-beater's skin, and leave the cure altogether to nature.

One advantage of the sheet-lead over the usual applications, to which we have not alluded, is, that there is less necessity to renew the dressings so frequently, as when lint is used; for, the wound is kept much cooler, and the tendency of the discharge in hot weather to become acrid and offensive, is very sensibly diminished. There is one form of superficial ulceration, which is very often most difficult and obstinate of cure; we allude to herpetic and impetiginous sores. Now, although we do not mean to assert that the sheet-lead is adapted to every sore of this description, or that it has any healing efficacy "*per se*," we do not hesitate to recommend its use, in preference to the ordinary applications. Ointments, and all greasy or irritating plasters, very generally disagree with these sores; and, on the whole, simple astringent washes appear to be most serviceable. The chief objection to the use of these is, that the linen, which has been wetted and applied, is apt to become occasionally dry, and to adhere to the raw surface, and thus to irritate it and prevent it from healing. The sheet-lead prevents the rapid evaporation, and thus keeps the sore in a moist state during the intervals of the wet application.

The sores which are apt to occur on œdematous limbs is another tribe which is often equally intractable, and which very often appears to be rather aggravated than relieved by the ordinary dressings. M. Parisé has had recourse to the use of mildly stimulating washes, and the sheet-lead, with decided advantage, in a number of such cases.—Baron ——, advanced in years, had for some time been labouring under chronic hepatitis, which had at length induced ascites and general anasarca.

The distended skin of the legs became red and excoriated, in consequence of the friction of the bed-clothes, and of the bandages with which the limbs were swathed. The excoriations were at some places so deep that they might be considered rather as ulcers than as mere abrasions of the skin. The finest charpie, the mildest washes and ointments, were tried; but every means appeared only to aggravate the distress. M. Parisé being now summoned to his assistance, recommended that the limb should be kept in the horizontal position, the raw and ulcerated surfaces be covered with very thin sheet-lead, and this to be secured by a few turns of a linen roller. The comfort derived from this simple treatment was speedy and decided, and the sores began gradually to cicatrize and heal up. During the remainder of the Baron's life, there were frequent returns of his dropsical complaint, and at these times, the limbs always suffered in the above mentioned manner. The same local treatment was adopted, and invariably with success.

As an example of the effects of the sheet-lead dressing in the ulcerated surfaces which are apt to follow the application of blisters in some constitutions, and especially in young children, we quote the following case.

M. Parisé, was requested to visit a child, on whose arm a blister had been applied for an obstinate chronic bronchitis. The raw surface had never shown any disposition to heal; it had become ulcerated, and had extended itself in all directions, so that nearly the whole arm, from the shoulder to the elbow, was excoriated and inflamed. The child's health had suffered much from the constant pain, and irritation, and want of sleep. The dressings, which had been used, had been either utterly useless, or positively injurious. M. Parisé recommended that the arm be covered with a piece of thin sheet-lead, and no other application be used. In the course of a very few days, the whole of the raw surface was completely healed.

The sheet-lead is well adapted to most varicose ulcers. As a matter of course, regular and even compression of the limb must be employed at the same time. Professor Marjolin has recommended this treatment for such sores, in the article, Ulcere, Dict. de Médecine.

In conclusion, we may confidently recommend the use of sheet-lead as a dress-

ing to all ulcers, which are superficial, and from which the purulent discharge is not very profuse; more especially when they have a tendency to cicatrization, and when, therefore, it is the principal object of a surgeon to defend them from any irritation which may interrupt the healing process.—Even when the suppuration is abundant, some practitioners have had recourse to the sheet-lead, with the simple modification of pricking a number of holes through the thin plates, for the purpose of allowing part of the matter to ooze out. The economy, cleanliness, and convenience of the remedy, as well as the avoidance of all irritation, itching and other distresses, which are so frequently induced by the common dressings in certain ulcers, are such obvious advantages of the sheet-lead used as we have explained in the preceding observations, that they cannot fail to recommend it strongly to the attention of the practical surgeon.—We have only further to state, that the sheets or plates ought to be made of different thickness, and that they must be always perfectly smooth, even, and of such consistence, that they may be readily cut into any size and shape with a pair of ordinary scissors.—*Med. Chirug. Rev.* April 1836, from *Bull. Gén. de Thérap.*

—

43. *Fracture from Muscular Action.*—Mr. Liston in a clinical lecture (*Lancet*, April 30, 1836,) alludes to the case of a woman, æt. 49, who was admitted into the North London Hospital, on account of a fracture of the humerus, which occurred in the act of stretching out her hand merely to lay hold of one of her children—not to restrain its motions, but merely to play with it.

—

44. *On the Treatment of Disunited Fractures.—Setons.* The following remarks, extracted from a clinical lecture by Mr. Liston, delivered at the North London Hospital, April 15, 1836, are worthy of attention. It will be noticed that some of the lecturer's views are not in accordance with those of the eminent surgeon to whom we owe this improved method of treating ununited fractures.

"The patient who was here lately with a disunited fracture of the bones of the forearm, received the injury nine months previous to his admission. He was admitted on the 4th of November last. He was caught between two wheels of a locomotive engine, by which he sustained a compound fracture of the left ulna and radius. He stated that the bones were broken into four pieces. It frequently happens that when a man gets a limb broken, he wishes to make it appear that his sufferings have been very dreadful, that the case has been much worse than it really was, that the limb has been smashed into a great many little pieces. However, in this instance, both bones were fractured. I presume there was only a solution of continuity in each bone at one point. They were broken in two pieces, not in two places. The arm was put up in splints. He returned to his work after the accident too soon, and he found it again necessary to pay some attention to the limb. When he came here there was a perfect false joint; there was no osseous union whatever. The man's general health was very good, and the case seemed favourable for an attempt to bring about a union.

Now, you are no doubt perfectly well aware that various means have been employed for the purpose of bringing about union in the case of disunited fracture. The ends of the bone have been rubbed against each other so as to excite inflammatory action, which might be followed to a certain extent by a deposit of new matter. But a good deal of excited action must be produced, before osseous matter will be formed, or matter that will unite firmly and immoveably the two ends of a broken bone: that plan has completely failed again and again, and is not to be depended on more than long-continued pressure, which plan some time since had its advocates. It was also proposed by Mr. White, of Manchester, to cut down upon the fracture, and to take away a part of the ends of the broken bone. I should have stated that it has been said by Mr. Benjamin Bell, Mr. Wardrop, and others, that the existence of disunited fracture sometimes depended on a portion of muscle being interposed between the two broken ends; and they have talked of cutting down upon the fracture and taking away that portion of interposed muscle. Now that is certainly a very absurd notion. It is a notion which has never been, and which I really think is not likely to be, acted upon. But it has been proposed to cut down and take away the ends of the fractured bone. That operation has been performed, but it has failed also. It is a difficult and severe process, and even when it has been done, and done effectually too, a

cure has not followed. I have never attempted this operation but in one instance, and that was in the case of a disunited fracture of the humerus. As you will see in my collection, I cut off good large portions of the end of the bone; but although I cut them off completely, and although the limb was carefully kept in splints for two or three months, no union ever took place. It has been proposed likewise to cut down upon the fractured bone, and to destroy the smooth substance which you find at the ends of the bone, with some sort of escharotic,—with the *lapis infernalis*, for instance,—but this has also failed. A proposal, I think, has been made to denude the ends of the bones, to drill holes in them, and to connect them by pieces of silver wire. It is too artificial a mode of proceeding, and I should fear that from the exposure and bruising of the ends necessary for accomplishing the object (for perforations cannot be made unless by denuding the bone freely, and holding it securely by some contrivance till the object is accomplished,) that necrosis, instead of union, would be apt to follow. In short, all measures have failed in some cases in bringing about a cure.

The practice I pursued in the case of the man in this hospital, to which I have alluded, is that by seton. It is a practice which was first employed by Dr. Physick of Philadelphia, and it has been tried in this country, in some instances with success, and in others with no success. Mr. Wardrop tried it, and although that case was supposed to be completely cured, yet I happened to see the patient some fifteen years afterwards with his limb dangling like a flail. There had been no osseous union whatever. This operation, however, has been more successful than any of the others; and I believe it would be pretty generally successful, if the surrounding soft parts could be a good deal torn up, if the periosteum could be a good deal excited, and if a seton were inserted, as in this case, to keep up the action for a certain period, and retarded only for a very short period. Generally, the seton has been kept in for a great many weeks or even months, and until its influence has in a great measure failed,—has, in fact, had the contrary effect to that intended,—has weakened the deep-seated action. If you will only consider the subject, you may easily suppose that retaining the seton for a great length of time will rather counteract your object than otherwise. Retaining it in for a long time is attended with considerable discharge, which is unfavourable to the process of healing, and which puts the parts in the situation of a compound fracture, which is by no means desirable. I would have you, then, cut down upon the fracture, as I did here, avoiding the nerves and vessels of importance. Cut the soft parts as little as possible. Introduce an instrument between the two ends of the broken bone, turn it well round, and then insert a seton, not caring that it should go exactly betwixt the ends of the bone, because I would rather pass it over the surface of the broken ends, and perhaps one on each side. Shake the limb a good deal about, and move the instrument rather roughly. The object is to excite a considerable degree of action; when that has been done, put the parts into as good a situation as possible for healing, and retain them so without the least possible motion. You have then attained all the good the seton can possibly bring about, and if you keep it in for a longer period, it will have the effect, as I have said, of weakening the powers of the part. I now show you the instruments I used. I cut down upon the fracture with a bistoury. A sort of perforator was then introduced, which I turned round rather roughly and perseveringly, so as to lay bare the extremities of the broken bones. I was in no very great hurry to complete the operation; I rather wished that the parts should be a good deal disturbed, and that anything intervening between the ends of the bones should be destroyed. This needle was then passed, by which I carried a large seton through the arm. In a few days a second, a larger and coarser seton, was introduced, smeared over with red precipitate powder, so as to produce more and more excited action. The operation was performed on the 5th; it was followed by a good deal of swelling, great pain in the part operated upon, and considerable fever. On the 11th the fresh seton was substituted for the other. On the 12th it was withdrawn entirely, and forthwith splints were applied. On the 27th of the same month, in consequence of great pain, one of the splints was removed, and a collection of matter evacuated. The splints were applied in such a manner as to allow the wounds to be exposed; one of them could be taken off without disturbing at all the position of the parts. The ends of the bones were kept in accurate apposition until the 19th of December, and on the 30th January the patient was

discharged cured, and with the bones firmly united. I have succeeded in other instances, both in the upper and lower extremity, in bringing about union by the same process, as have many other surgeons, both in this country and in America. I may mention one in particular, my friend Dr. Mott, of New York.

I have nothing to add to this statement, excepting that in a similar occurrence in any situation of the body, I should be very much disposed to follow the same practice. I should be inclined to try the seton; it is a less severe operation, and more readily accomplished,—accomplished with less risk to the patient than any other. I should take the seton away at an early period, because I should consider that by so doing I had a much greater chance of obtaining my object, than I should have by retaining it for any lengthened period.

—

45. *Polipi Cured by Sulphate of Zinc.*—We have already noticed (Vol. xv. p. 532,) the reputed efficacy of the sulphate of zinc in the cure of Polypi. Additional testimony of its remedial powders is afforded by the following case communicated to the *London Medical Gazette* (July 2, 1836,) by Wm. Hall Turner.

"A young lady consulted me in the beginning of March of the present year, for a swelling in the left nostril, which, on examination, I found to be a Polypus of the gelatinous kind, with a wide peduncle extending from the middle chamber of the nose far back into the posterior nares. I ordered a lotion to be applied three times a day, in the proportion of ℈ij. of sulphate of zinc to ℥vij. of water, gradually increasing the zinc to ℥j. A small piece of lint being moistened with the solution, was each morning placed round the polypus, and allowed to remain during the day. The lotion was also applied my means of a syringe.

The polypus rapidly diminished, and was completely cured by the end of April.

—

46. *Lateral dislocation of the knee.* A case of this rather rare accident was recently admitted into the North London Hospital. The patient was a bricklayer aged sixty-one. While building a sewer, his right leg and foot being fixed between the brick-work, a mass of clay, weighing about a quarter of a ton, fell on the outer side of the thigh, just above the knee-joint, when the outer condyle of the femur was forced on the inner articulating surface of the head of the tibia. Much swelling about the joint ensued, but the nature of the injury was perfectly evident to the surgeon. A considerable projection was formed by the internal condyle of the femur pressing against the integument on the inner side of the knee; the joint was fixed; the foot was slightly everted. The dislocation was readily reduced by the house-surgeon, Mr. Hallam, by employing simple extension and counter-extension. The limb was then placed on pillows on the inclined plane, and hot fomentations were ordered. The man has gone on well since.—*Lancet* July 9, 1836.

—

47. *Polypus within the uterus successfully removed by ligature.* This is one of three interesting and instructive cases of Polypus Uteri, related by Dr. Buck, of Lübeck. The object of the narrator is to shew how erroneous is the opinion generally—we may almost say—universally received by surgeons, that morbid growths of this nature, arising from the fundus of the uterus, do not admit of removal as long as they are contained within the cavity of that organ. "Experience has taught me," says the Doctor, that when the *os tincæ* is open, it is practicable to apply a ligature to a polypus; and that this operation is always indicated whenever an inactive state of the organ renders it incapable of effecting the protrusion of its contents, and at the same time the constitutional disturbance threatens imminent danger to the life of the patient." Such a contingency, indeed, does not often present itself; and the operation in question is no doubt one which it will but seldom be necessary to have recourse to. That this necessity does, however, sometimes occur, the following case abundantly proves, and we may add, that it reflects not a little credit on Dr. Buck, who, undismayed by the known difficulties, and the supposed impracticability of the operation, nevertheless undertook it, performed it with success, and thereby saved his patient's life. We shall extract the case at length.

"In January, 1834, I was called to see a poor woman, who gave me the following account of her sufferings:—She was 46 years old, had previously enjoyed

good health, and was the mother of six children. Since the death of her husband, which took place nine years before, she had abstained from sexual intercourse. Two years previously, she was seized, in place of the ordinary menstrual discharge, with a violent hæmorrhage, which ceased after a duration of eight days, and for the space of a year did not return. In this interval she began to suffer from an oppressive sense of weight in the belly, pricking pains in the side and in the pelvis, difficulty in voiding urine, and a dragging sensation in the sacral and lumbar regions.

These symptoms gradually increased in severity, and about Whitsuntide, 1833, hæmorrhage from the uterus again took place, and continued to recur at short intervals until about six weeks before the period of my visit, when it ceased altogether, and a fluor albus, having an offensive smell, appeared in its place. I found the patient in a state of extreme emaciation, cachectic in her appearance, and so weak as to be scarce able to leave her bed. She complained of violent pains in the iliac region, which were augmented by pressure, and from time to time of slight pains resembling those of labour; her appetite was bad, her pulse small and quick, she coughed a good deal and vomited occasionally.

On making a manual investigation, I found the uterus in its normal situation, the lips thin and flaccid, and the os uteri itself open, so that it admitted the index finger with facility. Within the organ, and apparently arising from its fundus, a polypus was clearly to be felt; it had the circumference of a large pear, was insensible to moderate pressure, and did not quite reach to the external orifice of the uterus. The parts were covered with a mucous exudation streaked with blood, and of an offensive smell.

I directed a plan of treatment calculated to improve her general health, in the hope that the labour-like pains would at length expel the polypus from the cavity of the uterus. Deceived in this expectation, I prescribed 24 powders, each of which contained half a scruple of secale cornutum, and these failing to produce any effect, nine others containing one scruple each; the latter were all taken in 36 hours; nevertheless, the uterus still remained in a state of inactivity, and even the stomach, an injurious action upon which has been attributed to this medicine, was not in any way affected by it.

Dreading the difficulty of applying a ligature to a polypus so situated, and as there were no dangerous hæmorrhages, I still waited, hoping that the powers of nature would finally effect the desired protrusion. But the health of the patient daily grew worse, the mucous secretion became more and more copious, and the cough, which had hitherto been dry, was now accompanied by an abundant and ill-looking expectoration, together with pains in the breast. Frequent though slight febrile paroxysms, nocturnal sweats, and a watery diarrhœa, added to the prejudicial influence of many privations, and the want of proper attendance, soon reduced my unfortunate patient to a state of complete marasmus, so that I already believed her end near, and certainly under these circumstances should have desisted from all operative proceeding, had I not convinced myself from previous experience, that now, the speedy removal of the polypus alone afforded a chance of recovery.

With the assistance, therefore, of Dr. Pabst, I undertook to apply a ligature round the root of the polypus, selecting for this purpose Jörg's double canula.* The patient being placed upon a cross-bed in a half-sitting position, I introduced the instrument previously oiled, and provided with a thread upon the left index finger, and pushing it carefully through the os tincæ, between the polypus and the yielding uterine parietes, carried it as near the root of the tumour as possible. One canula being firmly held in this position, I at length succeeded, after many fruitless attempts, in passing the other one, with its cavity always turned towards the polypus, fairly round the pedicle, and I now joined the two together. The pain occasioned by the unavoidable friction on the inner surface of the uterus, was trifling, nor did this stimulus provoke the organ to the slightest contractile effort. On tightening the thread, I was convinced by the insensibility of the parts, that I had not included any portion of the uterus, a circumstance the more to be dreaded, as the point where the ligature was applied, was quite out of the reach of the

* I chose this instrument on account of its length, but found that the curvature at its upper end rendered the operation more difficult, and I now employ in preference two straight silver canulas which separate and unite with greater ease.

finger. During eight days, I daily drew the thread tighter, it then broke, and on examination I discovered that only half of the polypus had sphacelated away. A re-application of the ligature was successfully effected, though not without considerable difficulty, as the body of the tumour had much diminished in size and firmness, while the pedicle seemed proportionally thick and sinewy. In the mean time, the injurious influence of the copious and highly fetid discharge was, as far as possible, counteracted by the frequent use of antiseptic injections.

In the course of a few days, the last ligature came away, and at the end of a fortnight no remains of the polypus were discoverable; the uterus, too, had contracted, and the os tincæ soon after assumed its normal form.

The patient, who had hitherto been lying in an almost hopeless state, now recovered strength surprisingly fast; the diarrhœa, fever, nocturnal sweats, and puriform expectoration, quickly disappeared, and at the expiration of two months, with the aid of tonic medicines, she was restored to perfect health."—*Med. Chirurg. Rev.* July, 1836, and *Rust's Magazine.*

---

48. *Vaginal Hernia of the bladder, the diagnosis presenting unusual difficulties.*—This is an extremely curious case, and one pregnant with instruction. It is related by Dr. Buck of Lübeck, the same on whom we lately had occasion to pass a merited eulogium, but who now appears before us under a more questionable shape. It will be seen that he committed a great blunder in his diagnosis, which nearly led to very disastrous consequences, neither more nor less, indeed, than a summary excision of nearly the whole of the bladder. He, however, honestly confesses his error; and certainly there are few who would not have been misled by the remarkable combination of deceptive appearances which the following case presented.

"A woman, ætat. 54, of seemingly sound constitution, 12 years previously had borne her second and last child. The labour was long and tedious, and the placenta, which, according to the statement of the midwife, was adherent to the uterus, was brought away by the hand. From this period she frequently experienced a sudden sensation of emptiness in the abdomen, from which something appeared, as it were, to sink down, and at the same time a feeling of fulness and pressure in the vagina, all which symptoms soon disappeared on assuming the recumbent posture. Their character, however, became progressively more marked, and one day she discovered projecting into the vagina, a round foreign body, which perceptibly increased in size, particularly after corporeal exertion.

Her situation as children's nurse in St. Ann's poor-house, not requiring hard labour, it was only after a lapse of some years that the tumour had so augmented as to protrude out of the vagina, and at that time, by abstaining for awhile from all exercise, the patient was enabled to reduce it herself. She did not seek medical advice, and for many years, during which the tumour continued to increase in size and the protrusions in frequency, she always succeeded in replacing the body without assistance. At length, having descended lower than usual, it obstinately resisted all her attempts at reposition, and now remained stationary, forming a large and painful swelling projecting through the vulva. At no time had she experienced difficulty in passing her urine. For a quarter of a year she bore her sufferings in silence, still continuing to attend to her duties: and it was only when become incapable of quitting her bed, that she was induced to apply for medical assistance.

On examination, I found before the labia majora a hard body, equal in size to the head of a seven-months' fœtus, no where yielding to pressure, and covered in its greater part by cauliflower excrescences, which secreted an ill-smelling ichor; its lower third was not yet attacked by the ulcerative process, was of a vivid red colour, and presented very accurately, only on a larger scale, the form of the vaginal portion of the uterus. At the extremity of this part, a transverse slit, regarded by us as the os uteri, admitted a probe to the depth of half an inch. The body of the tumour appeared closely invested by the inverted and protruded vagina, and its base had contracted firm adhesions with the inner membrane of the labia majora, so that inferiorly it was continuous, and formed a straight line with the perineum. On examination per rectum, the uterus was no where to be felt. I made many attempts to introduce the catheter in the usual way, but in this was constantly foiled, the urethral orifice being concealed by long and painful

excrescences, which bled on the slightest touch. However, the urine was voided without difficulty, and in normal quantity, the only inconvenience being that resulting from the unavoidable wetting of the surrounding ulcerated surfaces: the evacuation was not followed by any perceptible alteration in the bulk of the tumour, nor did pressure upon the latter at any time occasion a desire to make water.

The state of the patient's health was as yet tolerable, although frequent slight attacks of fever, and much dejection of mind, made it sufficiently clear that the disease was beginning to act injuriously on the constitution.

I considered the case to be one of complete prolapsus of the uterus, which from exposure to many causes of irritation, in particular the air, the urine, and the frequent ill-directed efforts at reposition, had been attacked by a slow inflammation, which at length had passed into cancerous ulceration.

In order to liberate the patient from a disease which must else, inevitably prove fatal, I determined to extirpate the cancerous uterus, a proceeding which I decided to adopt not only because it is a surgical aphorism that in such cases this operation presents the only chance of preserving life, but also from a consideration of the following circumstances:—the age of the patient who had passed the grand climacteric, the manner in which the disease originated, viz. by external injuries alone, the completeness of the protrusion, and finally, the still tolerable state of the general health. In these views of the nature of the disease, and of the plan which it was necessary to adopt, I was supported by many of my colleagues, practising surgeons and accoucheurs, who had frequently seen and examined the patient.

It was my intention to dissect the inverted vagina from the uterus, and then to remove the latter by separating its remaining connexions, at the same time carefully avoiding the adjacent parts.

The rectum having been emptied, the patient was placed upon the operation table, and fixed in the same position as in the operation for lithotomy. After many fruitless attempts by different individuals, who all acted under the supposition that the direction of the urethra was normal, Dr. M. at length succeeded in introducing the catheter into the bladder by holding the instrument almost perpendicularly, which would not have been possible had the bladder been in its natural position. As we were unable to feel the extremity of the catheter through the protruded body, but by examination through the rectum, distinctly discovered it at the posterior part of the swelling, we concluded, although feeling somewhat insecure with regard to our diagnosis, that the bladder had sunk down behind the prolapsed uterus, and rested against the posterior surface of that organ; a supposition which seemed to explain satisfactorily the perpendicular direction of the urethra. Notwithstanding this discovery, it was unanimously deemed necessary to proceed with the operation.

The tumour being a little raised, I made an incision several inches in length along its inferior surface, and commenced dissecting away the thickened vagina, carefully avoiding the adjoining rectum by turning the edge of the bistoury towards the tumour. But to my astonishment, instead of exposing the substance of the uterus, I came upon true muscular fibres, and distinctly felt the catheter through the part from which I had removed the dense vaginal investment. These two circumstances convinced us, that the greater portion of the tumour was nothing else than the prolapsed bladder, but we were still unable to decide on the relative situation of the uterus, and whether, in fact, this organ formed part of the tumour. From the urethral orifice where the most considerable excrescences existed, I now made a sufficiently deep incision, united this with the inferior one, and thus dissected off the whole leather-like envelope, together with the fungous masses. The denuded bladder was in no place wounded, and it had lost so much of its hardness, that although its parietes were still unusually thick and dense, that the catheter was easily discoverable at every part of its surface. The operation was rendered more difficult by a pretty severe hæmorrhage, which, however, after tying a few small vessels, soon yielded to cold affusions. The bulk of the swelling was now diminished by nearly one half, the surface was smooth and freed from cauliflower excrescences, and after some gentle attempts at reposition, it sunk a little back spontaneously. The patient, after taking a laudanum draught, was carried to bed.

The first days following the operation, with the exception of some degree of febrile excitement, her state on the whole was as favourable as could be expected; the appetite was tolerable, her nights were passed quietly, she experienced but little pain in the parts operated upon, and none in the abdomen, which was also free from tympanitic distension. The parts were at first bathed with cold water, afterwards gently stimulating fomentations were employed. The urine, unaltered in colour, was drawn off from time to time by a catheter, which was retained constantly in the bladder. For several days the bowels acted naturally, but at a later period it was found necessary to administer an occasional enema. The prolapsed bladder continued to recede gradually, and the granulating surface presented a kindly aspect, and secreted healthy pus. Such was the state of our patient during three weeks and a half, and sanguine hopes were entertained of her eventual recovery; but she now gradually lost her appetite and sleep, emaciation commenced, attended by a slow fever, and proceeded with rapid strides, the surface of the wound became dry and red, and a colliquative diarrhœa, which nothing could restrain, finally carried her off six weeks after the operation.

Autopsy. The body was extremely emaciated, and on the inner side of the left arm, we observed a lipomatous tumour of considerable size. The organs of generation, together with the bladder and a portion of the pelvis, having been carefully removed, the following facts were ascertained: the entire protruded body, which we at first believed to be the uterus, was a prolapsus of that part of the bladder uncovered by peritoneum, and which, in its gradual descent, had pushed before it the upper wall of the vagina. The lower third of the tumour, so closely simulating in form the vaginal portion of the uterus, was free from scirrhus degeneration, and formed a compact mass, superficially smooth, and of an almost cartilaginous consistence. An incision made into this part from below upwards, only reached the bladder at the depth of one inch and a half. The slit at its extremity, mistaken for the os uteri, and which had contributed to our error more than any thing else, was formed by a peculiar duplicature of the vagina, the origin of which it is difficult to explain. Worthy of remark in this case was the extraordinary dilatation undergone by the vagina. For the upper wall, with which the bladder is naturally in contact, could alone have formed the bag by which the tumour was invested: the remainder of the vagina anteriorly intimately united with the bladder, was continued up to the uterus as in the normal state. That the vesical hernia did not take place through a rupture of the vagina, was rendered evident by the thick leatherly envelope of the tumour, as well as by the uniform absence of those symptoms which would necessarily have attended an occurrence of this nature. The coats of the protruded portion of the viscus were in a thickened degenerated state; those of the part covered by peritoneum, and which was still within the cavity of the pelvis, had suffered little alteration. The uterus itself was found lying in the concavity of the sacrum in a perfectly healthy state, only somewhat higher in the pelvis than is usual.

Such is the history of this remarkable case, and when we regard the external appearances, in particular the deceptive resemblance of the hard and symmetrical extremity of the tumour to the vaginal portion of the uterus, and also the total absence of all symptoms indicating a lesion of the bladder, we cannot but believe ourselves justified in having mistaken the nature of the disease even until the eleventh hour. Had our diagnosis been correct, there must still have been a necessity for the operation, by which the cancerous and degenerated vagina was alone removed, without injury to the bladder or the surrounding structures."—*Ibid.*

—

49. *Account of a new mode of curing aneurism by Anastomosis, or the blue erectile tumour, formed by the anastomosis of arteries and veins, employed by Prof.* LALLEMAND.—By J. R. O'BRYEN, M. D.—Perhaps there are few experienced practical men who have not often seen chancres attack the middle of the *corpus cavernosum*, and who must also have noticed more or less extensive loss of substance caused by them, as well as the *cicatrices*, (or dense fibrous tissues) which are formed, in consequence. The effect of these cicatrices in erection was, I believe, first observed by M. Lallemand, Professor at Montpelier—at least so far as any practical result was concerned. He remarked that in a penis thus affected on one side, during erection, only the opposite side to the cicatrix was distended with blood,

and as much of the other side only as lay between it and the *pubis*, while the part from the *cicatrix* to the gland remained perfectly flaccid. The reason of this is evident, the blood not having been permitted by the cicatrix to pass into the portion anterior to it.

The erectile tumour is in the greater number of cases a disease of childhood, being generally congenital. A Professor at Berlin proposed to cure it by incisions, which were to be immediately united by needles. But every practical man knows that the effusion of blood in such a case is often so great, that the child either dies in the operator's hands, or the general health is considerably injured, and often without the disease being cured. From the effect of the *cicatrix* above noticed, it was imagined that, by making a number of *cicatrices*, in different directions through the tumour, its circulation, and consequently its growth, would be arrested. M. Lallemand accordingly proposed and successfully put into execution, the following method of cure, viz. to introduce through the tumour a number of thin long needles, (not made of tempered steel, which is too brittle,) and then pass a ligature over the ends of them, so as to form a figure of 8—and by this means to cause inflammation of that part of the tumour between the ligature and needles—and consequently adhesion of the coats of the anastomosing vessels.

For the purpose of assisting and seeing this method put into practice for the second time, M. Lallemand requested me to accompany him in January, 1835. The patient was the infant child of the Marquis de ——, a Spanish nobleman, then resident at Montpelier, where he had taken refuge from the *cholera*, which raged in Spain. The child, aged 7 months, was healthy, and, though small for its age, was strong and plump. The mother was to outward appearance also healthy, and aged about twenty. The patient, when undressed, and placed across my knees, for the purpose of proceeding to the operation, presented between the shoulders a blue erectile tumour, which Mr. L. said had increased during the last three months from the size of a dollar to its present dimensions, viz. from the spinous process of the fourth dorsal *vertebra*, extending to the eighth inclusive in length, and two inches some lines in breadth, of an oval figure, and raised above the surface of the surrounding skin a quarter of an inch. When the child cried and struggled, or when the tumour was much handled, it became turgid and firm.

The first day's operation consisted in introducing at one quarter of the tumour near its margin, seven needles parallel to each other, each needle passing through the tumour on a level with the surrounding skin; after which he applied a ligature on each needle in the form of a figure of 8, taking care that the projecting end of each was guarded by a small piece of cork, or some other substance, to prevent injury to the adjacent skin. Three days afterwards he inserted in another quarter of the tumour other seven needles parallel to each other; and after a lapse of seven days from the first application, he introduced other seven needles in the same manner in the third quarter; and four days after seven more needles in the fourth quarter, repeating the ligatures on each set of needles. When inflammation and slight suppuration had taken place round the needles, so as to cause them to become quite loose, he then withdrew them, which usually happened from the 7th to the 10th day after insertion.

The tumour now presented a rhomboidal or lozenge-shape; and he continued the same process through the remaining portion. The general health of the child did not appear much affected, except that on the day following the insertion of each set of needles, there was a little febrile excitement.

A day or two after the removal of the needles from the first part of the tumour operated upon, instead of the blue erectile character, it became red, more resistent, and harder than the neighbouring skin, with which it was nearly on a level, though still a little inflamed and swelled. This treatment lasted until the end of March, when the whole presented nearly the above appearances.

On examining the child before I left Montpelier in May last, the circumference of the tumour was much less, it having evidently contracted at least one-third. It was then level with the skin, having a whitish-red, or pink tinge, not painful to the touch, or affected by the child's crying or by handling it, but felt harder than the skin, though not so elastic. Thus was accomplished a perfect cure; and I have no doubt that the more dense parts of the new tissue formed, will be absorbed, and the skin which covered the tumour will approach, if not entirely acquire, its healthy state.

As I had an opportunity of judging in the case of the first child operated on by this means, a boy of 8 years of age, who presented a similar tumour on the right cheek, Mr. L. tried to cure it by incision. But the loss of blood was so considerable that he relinquished the idea of again trying that mode, having found it extremely difficult to arrest the hæmorrhage. He then put the method above spoken of into execution. This took place many months prior to my seeing the boy, whose cheek then appeared as if it had been burned, but without any dragging of the skin, which was shining, smooth and thickened, though not hard. A superficial observer, indeed, would scarce perceive it.—*Edinburgh Med. and Surg. Journ.* April, 1835.

—

50. *Manner of obtaining Blood in cases where the vein does not yield it readily.* By Dr. Burdach.—The plan is applicable to all cases where open veins do not give a sufficient quantity of blood, or in bleeding fat persons where the veins are not very apparent. To produce the effect, says M. Burdach, it is merely sufficient to apply a ligature also on the other arm, as if you were about to open a vein in it. After an interval of from two to ten minutes, the vessels of both arms will be swollen and full of blood. As soon as the person feels numbness, the ligature is to be relaxed, and compression made with the thumb, that the blood of the open vein may flow in a jet; the flow of blood is to be kept up or stopped by tightning or relaxing both ligatures.—*Dub. Journ. & Gräfe et Walther Journ. der Chirurgie.*

—

51. *Luxation of the forearm backwards reduced seventy days after the accident.*—A case of this is recorded by Dr. Cappelletti of Trieste, in the *Annale Univ. de Medecina* for October last.

—

52. *Expulsion of large urinary calculi through the Urethra.*—It has justly been contended by our friend Dr. Randolph, (Vol. xv. p. 27,) that the objection urged against lithotripsy, on the score of the difficulty of voiding the fragments of a calculus after it has been crushed, is not valid, inasmuch as he has seen fragments of almost incredible size discharged through the urethra. It is an undeniable fact that the canal just mentioned not unfrequently permits calculi of extraordinarily large size to pass through it. In a late number of the *Journal de la Section de Médecine de la Loire-Inférieure*, Dr. Dupont has recorded the case of a child nine years of age, who passed *per urethram* a calculus of a flattened ovoid form weighing nineteen grains. It was seven lines and three-quarters long, four lines and two-thirds broad and three lines and a quarter thick.

M. Segalas has communicated to the Academy of Sciences the case of a woman sixty years of age, who passed through her urethra, without tearing it, a calculus weighing 3½ ounces; of an irregular ovoid form, two inches and a half long, an inch and a half thick, and an inch and three-quarters broad. M. Civiale has also called the attention of the Institute to some facts of the same kind, which are more numerous than is supposed. This surgeon has attached to his letter a table of 47 similar cases, in which are presented cases in which calculi, of four, five, six, and even 12 ounces were voided. Some of them were even of the size of a goose's egg.

M. Civiale quotes a case witnessed by himself, in which a man passed through his urethra a calculus nine lines long and six lines thick.—*Journ. de Méd.* June, 1836.

—

53. *Cure of ganglions of long standing, by puncture followed by compression.*—M. Chailly has communicated to the Medical Society of Paris two cases in which he has succeeded in curing very troublesome ganglions, by puncture and compression. This operation it is true, has been already repeatedly tried without success; but Mr. C. thinks that this want of success is owing to the selection of an improper place for the puncture. Hitherto they have been punctured at their summit, and as pressure was necessary to effect the adhesion of their parietes, the opening was necessarily closed and the fluid formed anew could not flow off. This inconvenience M. C. has avoided he says, by making the incision at the side of the tumour; the compression then favours the flow of the fluid, and the adhesion of the parietes of the cyst is speedily effected.—*Journal de Méd. et de Chirurg. Pratiques*, April, 1836.

54. *Otitis checked by pressure on the common carotid.*—Mr. Melhuish has succeeded in one case, in his own person, in checking inflammation of the ear by pressure on the carotid. The auricle was hard, swollen, and painful; the meatus externus narrowed; and the pain increasing. Acting upon the principle of diminishing the contents of the dilated vessels, Mr. M. compressed with his finger the common carotid against the bodies of the cervical vertebræ, when the pain was instantly removed. The pressure was continued for about fifteen minutes, and upon removing his finger he was delighted to find that the pain did not return.—*London Med. Gaz.*, July 9, 1836.

55. *Strictures of the urethra treated with bougies coated with burnt alum.* *La Lancette Française* of the 3d of May last contains some observations on a new means proposed by M. Jobert for the treatment of strictures of the urethra. This means consists in the application of calcined alum made into a paste with oil, and introduced in small portions into the urethra by means of a bougie; this instrument being also coated with the same medicament, by first oiling it and then rolling it in the powdered calcined alum. Two cases are recorded, which after resisting the ordinary treatment, yielded to this means.

56. *Treatment of Orchitis by compression.*—Having found local bleedings, cataplasms, frictions, &c. to be ineffectual in the treatment of inflammations of the testicle, Dr. Fricke has had recourse to compression after the following manner: The patient is placed against a wall, or on the edge of a sofa, so as to let the scrotum hang, the hair having been shaved off. The surgeon takes the scrotum in one hand, and separates the healthy from the diseased testicle, and with the other hand stretching upwards the skin that covers the diseased organ. If the testicle be very large he has it held by an assistant, if the swelling is not considerable, there is no need of assistance. In the same manner he separates the spermatic cord, and applies round it a bandage (an inch broad, and an ell long,) covered with adhesive plaster, to within an inch of the testicle, over this he applies a second bandage in the same way. These bandages require much precaution in their application, they must embrace the cord tightly, that the testicle may not slip up near the abdominal ring, particularly when its inferior extremity comes to be bandaged, which would render the operation not only painful but useless. These two bandages being applied, the application of others is to be continued from above downwards in the direction of the large extremity of the testicle, taking care that each turn of the bandage overlaps one third of the under one; when the large extremity of the testicle is arrived at, it is no longer possible to use circular bandaging. The surgeon then seizes the part where the first turns of the bandage were applied, and applies the bandages longitudinally to the tumour, going round the bottom of the testicle, and securing above the ends of the bandage. As many are to be applied as will cover the whole testicle; this compression must be graduated, and the best proof the bandage being applied properly, is the cessation of pain. If both testicles be diseased, one of them is to be treated in the manner above mentioned, and when the operation is completed, the second testicle is to be bandaged to the first, making the longitudinal bandages act as and upon one testicle only. After the compression is finished the patient may walk about his room.—*Dublin Journ.* and *Zeitschrift fur die Gesammte Medicin.*

MIDWIFERY.

57. *Absorption of the Placenta.*—Professor Naegele, some years since published three cases, (see Vol. iv. p. 244 of this Journal,) which seem to authorize the belief that the placenta, when retained after the delivery of the child, is sometimes absorbed by the uterus; and four cases since recorded, two of them in the practice of Dr. Götzenberger of Heidelberg, one in that of Dr. Salomon of Leyden, (see Vol. iv. p. 245 of this Journal,) and one in that of Dr. Gabillot of Lyons, (see Vol. v. p. 530 of this Journal,) lend considerable countenance, if they do not indeed entirely confirm, the truth of such a conclusion. Mad. Boivin, however,

denies that these facts are sufficiently convincing to authorize a belief in the occurrence of the phenomenon alluded to, and asserts that the writers just mentioned were misled in consequence of there being some malformation of the placenta, which prevented their recognising this body, when expelled.

The *Archives Générales* for May last, contains an interesting memoir on this subject by M. Maslieurat-Lagèmard,* in which the cases we have noticed are quoted, with the objections of Mad. Boivin to the conclusions drawn from them, and the invalidity of these objections are fully shown, and the absorbent powers of the internal surface of the uterus entirely established. M. M. endeavours, indeed, to show that not only may the placenta be absorbed, but even the soft parts of the dead fœtus, so as to leave nothing but the skeleton. The principal novelty, however, in the memoir of M. M., is a case which he has observed under the cure of M. Paul Dubois, in the *hôpital de la clinique d'accouchement*, in which a portion of the placenta left in the uterus was absorbed.

The subject of this case was a seamstress, 36 years of age, delivered 8th of January at full term, of a first child, the labour natural, a first head presentation, the umbilical cord of the usual size and length. A short period after the expulsion of the fœtus, the patient was attacked with colic, followed by such alarming hæmorrhage, as to require the introduction of the hand for the extraction of the placenta; but this latter body adhered so firmly to the uterus, that M. Dubois was able to extract only a portion. This manœuvre stopped the bleeding for a short time, after which it returned as violently as before, when the hand was again introduced and a small portion of the placenta taken away. The bleeding then ceased, but a second relapse rendered it again necessary to pass the hand into the uterus; at least one-fourth of the placenta however remained, in spite of these repeated efforts to remove it. For the first few days no unpleasant symptom occurred; but on the seventh day a large clot of blood came away and was followed by hæmorrhage, sufficiently violent to bring on fainting. The lochia have a slightly fœtid odour. On the ninth day, repetition of the hæmorrhage, which was less violent, and did not follow but proceeded the expulsion of the coagula. From this time no occurrence of note presented, and the woman left the hospital on the 6th of February, in good health.

This woman was watched with the greatest care. Her linen was put apart and carefully examined every morning, by M. Dubois himself, who was unable to discover any trace of placenta, either in the lochia, or the two coagula discharged on the seventh and ninth days. These coagula were not only cut, but they were placed in clear water, and nothing could be discovered different from the ordinary appearances of coagula.

A case of similar character to the above has been communicated to us by Dr. Lindsly of Washington, and will appear in our next number.

—

58. *Secale cornutum in after-pains.* Dr. Hoffman in the *Berlin Med. Zeit.* (29 June, 1836,) recommends the secale cornutum as very efficacious for the relief of after-pains. He gives it in the dose of 5 grains every two hours, with some powdered cinnamon. The pains and hæmorrhage are at first increased, but soon diminish, and then disappear altogether.

We have resorted to the venous tincture of ergot, in some cases of after-pains, especially where coagula were retained in the uterus, with decided relief.

—

59. *Extraction of a live child by the operation of turning after the mother's death.* —Mrs. H. 41 years of age, was frequently subject to accidents depending on plethora. Her first seven children were born without any accident: pregnant, for the eighth time in 1822; she lost the fœtus by abortion. Towards the fourth month of her ninth pregnancy, symptoms of congestion towards the head set in, and on the eighth month she began to complain of pain about the sacrum, with loss of motion in the right lower extremity. These accidents were soon joined by pain in the head and vertigo, which were a little relieved by general bleeding.

* We observe with some surprise that in the reprint of the Archives in the *Encyclographie des Sciences Medicales*, published at Bruxilles, this memoir is wholly omitted.

On the 25th of April, 1834, at mid-day, the first pains set in, and the membranes gave way at about 10 o'clock in the evening; the mobility now immediately became modified, and evidently weaker; the patient complained of excessive pressure about the forehead, anxiety and oppression. These accidents were worse on the following day; the face assumed a dark red colour. On the 26th, at mid-day, the patient barely answered any questions put to her, saying merely yes, when asked if she felt any pain, and pointing to the head. The pulse was now full and hard; venesection was had recourse to, and 16 ounces of blood extracted at 6 o'clock in the evening. Convulsive motions of the muscles of the face and extremities, however, soon appeared, and in a quarter of an hour after the bleeding the woman expired. A physician called in on the spot, found the head of the child presenting, but too high up in the pelvis for the application of the forceps. He immediately introduced his hand into the uterus, and, in a quarter of an hour after the mother's death, and twenty hours after the rupture of the membranes, extracted a male infant in an apparent state of death. The ordinary means were sufficient to excite the circulation in about five minutes, and the child, which was full-grown and well-formed, has since continued well.—*Berlin Med. Zeit.* July 6, 1836.

MEDICAL JURISPRUDENCE AND TOXICOLOGY.

60. *Dangers from certain Cosmetics.*—The public seem not to be sufficiently aware of the danger incurred by the use of many of the cosmetics sold for dying the hair. One of the numbers of the *Annales d'Hygiène et de Med légale* of last year, contains some interesting cases in which very disastrous effects followed the employment of these preparations. A young lady of 18, who used the powder of iris (*Iris germanica*) to her hair, was attacked with convulsions and delirium, from which she did not entirely recover for three months. Two similar cases were communicated to the Academy of Medicine by M. Aumont.

M. Deleschamp has recorded in the *Journ. de Chem. Med.*, t. vii., the case of a young lady who resorted to the Persian Wash* to dye her hair black. The result was that her hair was not entirely blackened, but many parts of the skin took this colour, and the lady became a prey to headaches.

Butini asserts that he has known acute meningitis caused by the nitrate of silver applied to the hair.

61. *Oxide of Zinc, an antidote to Belladonna.*—In July, 1835, a mare, aged nine years, belonging to the Marquis de Spinetto, accidentally swallowed half an ounce of the extract of belladonna. Washes, camphorated spirits of wine, &c. were immediately applied without success. The nervous system was greatly affected; the animal being attacked with palpitations and difficult respiration. In this condition Dr. Chiovitti prescribed three ounces of oxide of zinc to be taken in four doses during the day. In twelve hours the symptoms had disappeared. On the 5th day they again showed themselves, but were removed by the administration of a scruple of the medicine. Should this prove equally effectual in the human subject, the discovery will be an important one.—*Journ. de Chim. Med.*

PHARMACEUTIC CHEMISTRY.

62. *Conein.* According to the experiments of Geiger, Christison, Charlard, and Henry, is an oily liquid of a yellowish colour. It is completely soluble in ether and alcohol, and is lighter than water which dissolves a small portion of it. Its smell is strong, resembling that of the hemlock, or tobacco, or mice. Its taste is very acrid and corrosive. It proves fatal to animals in very small doses and with

* This is a solution of 10 grs. nit. argent. in one oz. of water.

great rapidity. It readily dissolves in acids, and produces with sulphuric, phosphoric, nitric, and oxalic acids, combinations which crystallize in the form of prisms. During the saturation the liquor assumes a bluish green tint which passes into reddish brown, and when they are evaporated, either at a gentle heat, in vacuum or in the open air, they lose, as the ammonial salts do, a part of their base, the smell of which is very distinct; the salts of conein attract water very quickly from the atmosphere, and are soluble in alcohol. The nitrate of conein decomposed in the fire gives origin to brown pyrogenous products. When placed in vacuo with bodies which attract much water, it partly volatilizes and leaves a reddish residue, which appears to be a hydrous conein. The vapour of conein is inflammable and produces white fumes in a tube filled with muriatic acid gas. The solutions of the salts in water form a cheesy precipitate with tannin, soluble in alcohol. A white precipitate is also formed when a solution of conein in alcohol of 30° is mixed with iodic acid. According to Liebig, conein consists of carbon 66.91, hydrogen 12.00, azote 12.80, oxygen 8.29. Charlard and Henry erroneously state that this is the first instance of a vegetable alkaloid being liquid. They have entirely overlooked *Nicotin*, the narcotic principle of tobacco, which has been shewn by Mr. E. Davy to be a liquid. Conein may be obtained by distilling green hemlock with caustic soda, and receiving the product into a receiver containing a little dilute sulphuric acid.—*Records Gen. Science*, Sept., 1836.

—

63. *Pectic acid in Gentian.* M. Bussy took 8 ounces of the root of the *Gentiana lutea* in rough powder, and poured over it 8 ozs. of pure water. In a quarter of an hour, he placed the powder thus moistened in a suitable apparatus. He then poured pure water over it in small portions at a time, taking the precaution not to add any more until the first was absorbed. In the course of a few minutes, a very deep brown liquid, of a thick consistence and transparent aspect, strained through into the receiver. He continued the washing until he had obtained 12 ounces of the liquid; when the colour became less deep, he changed the receiver and continued the washing, for which purpose, 3 kilogrammes of water were employed. The powder possessed then an insipid taste and slight colour. In 12 hours, the liquid in the first receiver had acquired the consistence of very firm jelly. It was completely soluble in a solution of carbonate of potash. From this solution it was precipitated in the form of a jelly by alcohol, sugar, &c., shewing that it was pectic acid. Bussy subsequently extracted it from gentian by the same process, followed by Braconnet in separating it from carrots. He suggests that the pectate of soda in solution may be substituted for eggs in clarifying sugar, and for gelatin in clearing wine, &c.—*Ibid. from Journ. de Pharm.*, June, 1836.

—

64. *Guiaiac Wood* (*Guaiacum Officinale.*)—According to Righini, the wood of this plant, when treated with alcohol, gives a resin with an aromatic odour. 2. When the alcohol is distilled, the resin is found to be mixed with a liquid like coffee and milk, which, when evaporated, forms an extract which, when melted with the peculiar resin, forms a homogeneous substance. 3. The white liquor remaining in the alembic contains a bitter principle of an oily consistence held in suspension by the gummy extractive matter. If this be made into a paste with magnesia, and distilled from a glass retort, a limpid aromatic liquid comes over. Dividing the *caput mortuum* by means of pure water, and in decomposing by dilute sulphuric acid, sulphate of magnesia is formed, and white a substance is deposited, which, when dissolved in alcohol, and evaporated, forms a body susceptible of crystallizing in needles. The author terms this substance *Guaiacic acid*, which is quite distinct from *benzoic acid*. 4. The brown resin of guiac, when heated in a retort on hot coals, assumes a red appearance, and disengages an oily fluid, possessing the tastes and smell of creosote. When purified, it constitutes the creosote of Reichenbach.—*Ib. from Journ. de Chim. Medic.*, July, 1836.

—

65. *Pellitory Root* (*Pyrethrum.*) According to Koene, this root, when subjected to successive treatment with ether, alcohol, cold and boiling water, afforded, 1st, a very acrid brown resinous substance, insoluble in a solution of caustic potash 0.59. 2nd. A fixed oil of a deep brown colour, acrid and soluble in potash 0.60. 3d. A yellow oil, acrid, equally soluble in potash 0.35. 4th. Traces of tannin.

5th. Gummy matter 9.40. 6th. Inulin 57.70. 7th. Sulphate, muriate and carbonate of potash, phosphate and carbonate of lime, alumina and silica, oxides of iron and manganese 7.60. 8th. Woody matter 19.80. 9th. Loss 2.6.—*Ibid.*

66. *Creosote.* KOENE has succeeded in obtaining a large product of this substance from coal-tar. He distils the tar in a retort supplied with a large wide beak, under which he places a capsule. At first, a light oil comes over, but by changing the receiver from time to time, a heavy oil is obtained; the distillation is continued, elevating the temperature until the naphthaline is condensed in the neck of the retort. A certain quantity of creosote remains in the beak united to the naphthaline; the product falls into the capsule on applying heat. It is then exposed to a cold mixture, and the naphthaline taken up by expression. To obtain the whole of the creosote, the expressed naphthaline is heated with its weight of pyroligneous acid until it melts. On cooling, the naphthaline crystallizes, and may be separated by pressure from the liquor, which is then saturated with subcarbonate of potash. The heavy oils obtained are treated successively by 1-40th of their weight of phosphoric acid, and by an equal volume of water. It is then rectified. The product is dissolved in potash, and the free creosote isolated by a slight excess of dilute phosphoric acid. It is again rectified, the water separated and pure creosote obtained.—*Ibid.*

MISCELLANEOUS.

67. *The Atmosphere in relation to Malaria.* That diseases, possessing a variety of types, originate from the existence of matter in the air we breathe, has been believed from the remotest ages. This is most distinctly true in woody or marshy countries, when attempts at colonization are first made. The fine town of Amaga, in Antioquia, Boussingault, (*Ann. de Chim.*, lvii. 150,) tells us, was founded in a forest. For six years, the population remained stationary: but, at last the roots and branches of the trees, having been completely removed in the lapse of a short time, the place became gradually more healthy, and it is now one of the most important little towns in the province. Panama, which was covered with wood, when the Spaniards first settled in it, possessed a deadly climate; but, at the present day, with the exception of the marshes of Chagres, the Isthmus is as healthy as any part of the coast of the Pacific in these latitudes. The influence of marshes in producing disease seems to be increased, when the water of the ocean becomes mingled with fresh water. Thus, Via Reggio, at the foot of the Appenines, in 1733, was so unhealthy, that the population did not exceed 330 inhabitants. But, in 1743, the sea-water was shut out from the lakes in the interior; and the consequence has been, that the town has become so salubrious, that the population, in 1823, amounted to 4000 souls. The town of Caitia, near Venezuela, from the same cause, is so unhealthy, that the negroes, when unable to pay their debts, made use of it as a sanctuary, well assured that their creditors will not have the temerity to pursue them thither. In such situations as we have described, where the climate is characterized by a high temperature and moist soil, the diseases of most common occurrence possess a highly putrid type, as yellow and intermittent fevers; but where the principal defect in the climate is the existence of great accumulations of vapour in the atmostphere, scurvy is the prevalent malady. Thus, in Choco, where rain constantly falls, it is an uncommon circumstance to meet with an individual who is not affected with this complaint.

On the elevated plains of the Andes, on the contrary, where the atmostphere is extremely dry, the inhabitants are subject to violent attacts of ophthalmia, as the children of the African desert.

In all marshy countries, the inhabitants recommend the same precautions, in order to prevent the accession of the endemic disease. From America to India, the traveller is directed carefully to avoid exposing himself to the evening dew.

Moscati took advantage of his knowledge of this fact, and endeavoured to insulate the miasma dissolved in the air over the rice fields of Tuscany, by condensing it along with the dew. He observed in the condensed liquid small flocks.

which possessed all the properties of animal matter, while the water, in the course of a few days, began to putrify.

In 1812, M. Rigaud de l'Isle made a series of experiments in the marshes of Languedoc with the same object in view. He condensed the dew upon glass. It exhibited the same appearances as that examined by Moscati; but, in addition, it afforded a precipitate with nitrate of silver, which rapidly assumed a purple colour. But he endeavoured to prove that such dew was hurtful to animals when taken internally, which was attempting too much, because it is sufficiently obvious, that cattle pasture on marshy herbage without suffering the slightest inconvenience.

In 1819, Boussingault remarked, while engaged in a geological excursion through the department of Ain, that sulphuric acid, when placed in the immediate vicinity of a marsh, became speedily black, while at a distance from the putrifying source it was not altered. At this period, fever was raging in the neighbourhood, and, hence, he concluded, that the change in the acid was produced by the agency of organic matter, which existed in the air. Impressed with the idea, that sulphuric acid was a delicate test of the presence of organic matter in the atmosphere, on his departure to America, he consulted M. Humboldt, who approved highly of the suggestion. When in company with M. Rivero, he arrived on the banks of the lake Taricagua, the dry season had set in, the waters of the lake had greatly subsided; the ground, which had been inundated by the rains, was now emitting abundance of affluvia, and dire fever raged among the unfortunate natives. Thus was an excellent opportunity presented of ascertaining the accuracy of the opinion in reference to the agency by sulphuric acid. A quantity of very pure acid was, therefore, exposed to the air for 12 hours. At the termination of that period it had acquired a deep black tinge. No inference could, however, be deduced from this experiment, because the striking effect which he observed might be produced by the numerous insects which swarmed in the air.

In 1829, he operated in a different manner. He was then at Cartago, in the valley of the river Cauca, which in its sluggish course gives origin to several Lagoons, from whence during the prevalence of the south wind, the malaria is propelled to the town, and produces abundance of disease: such was the state of matters when Boussingault visited the place. A little after sunset, he placed two watch glasses on a table in the middle of a marshy meadow. Into one of the glasses he poured warm distilled water, in order to moisten its surface, and to raise its temperature above that of the air. The other glass being cold was speedily covered with dew, the warm glass received no condensed liquid. When a drop of distilled sulphuric acid was added to each glass and evaporated by the heat of a spirit lamp, a trace of carbonaceous matter was always detected in the dew glass, while none was observable after volatilizing the acid alone. He repeated his experiments, during several evenings, but was then laid on a bed of sickness, by the agency of this very substance which he was endeavouring to detect. These trials shewed the presence of organic matter; the next object was to ascertain its quantity. Admitting that miasma as other organic substances contained hydrogen, he considered that if the quantity of this gas were appreciated, the great step would be gained. For this purpose, in 1830, he passed a given weight of impure marshy air through a red hot glass tube, and collected the water formed in a tube filled with chloride of calcium. A quantity of air weighing from 4697 grs. to 4774 grs. in different trials, afforded .77 gr. water, which is equivalent to .077 gr. hydrogen. When the air, previous to being passed through the hot tube, was brought in contact with sulphuric acid, it yielded no organic matter. Hence, he concludes, that it is very probable, that the malaria is a flocy matter, and that the employment of a veil as a precaution against the influence of malaria may be efficacious.

The preceding experiments, did not apparently indicate the presence of hydrogen, when it had been previously washed with sulphuric acid. To determine this precisely, it was necessary to experiment with great nicety. A vessel with sulphuric acid was made to communicate on one side, with a gasometer filled with common air, and on the other led into a tube 8 or 10 feet long, filled with chloride of calcium. To the latter, was joined a glass tube filled with asbestus, moistened by sulphuric acid; a tube filled with copper turnings and passing

through a furnace followed next, and conducted the air into another tube filled with asbestus, soaked in sulphuric acid. In the last tube the water was condensed, when any hydrogen was contained in the air submitted to experiment.

From 1609.6 grs. were obtained water = .0172 gr. hydrogen.
„ 5482.4 „ „ = .0443 „
„ 6498.8 „ „ = .0477 „

The proportion of hydrogen formed in the air on different days is represented in the following table:

Hydrogen in one part of Air.

	Weight.	Volume.
2nd and 3d April, 1834,	0.000008	0.00013
4th and 5th „	0.000007	0.00012
23d „	0.000002	0.00004
28th „	0.000005	0.00008
31st May, „	0.000003	0.00005

Boussingault, having thus, as he conceives established the fact, (although this inference might be considered premature) proceeds to speculate upon the nature of the compound, of which the hydrogen forms a constituent. He considers it to be in union with carbon, forming carburetted hydrogen.

Saussure inferred from his experiments that an inflammable gas existed in the atmosphere with a base of carbon. Boussingualt ascribes its origin to exhalation from the earth, in the decomposition of vegetable matter, and also from mineral sources.

Near the falls of Niagara there is a fertile source of it in the *Burning Spring*. In Italy and Sicily it occurs in abundance, and in China, about Kratnig-fou there are within 50 square leagues, no less than 10,000 salt pits, from all of which, inflammable gas is emitted. Near the town of Kioung-tcheou, there is a pit of 5½ feet deep and 16 in diameter. The gas proceeding from this pit, when set on fire, forms such a blaze that the whole country is illuminated during the night to a great extent. Near Bakow, likewise, according to Imbert, there are some extensive sources. Discharges of the same nature frequently occur in this country. Dr. Thomas Thompson has described one, which existed in the neighbourhood of Glasgow, where the gas burst forth in different parts of a hill side. When examined it was found to contain only 12 per cent. of common air.—*Records of General Science*, Sept. 1836.

—

68. *Deaths from Morison's Pills.*—Our late English Journals contain a number of cases in which death has followed the administration of this quack panacea. One of the agents of Morison, a certain Frederick Salmon, was tried in April last for manslaughter, and convicted, but recommended by the jury to mercy, as he was not the compounder but the vender only of the pills. He was nevertheless sentenced to pay a fine of 200*l.* (about 900 dollars,) and to be confined in Newgate until the same be paid. A report of the trial, with the sentence of the Recorder, is contained in the *London Medical Gazette* of April 9th and 10th last.

AMERICAN INTELLIGENCE.

Death from the Stings of Bees and other Insects. By JAMES MEASE, M. D., &c., &c., &c.—I. *Stings of Bees.* In the year 1820, my attention was roused by a publication in the newspapers, of the death of John Trevalli of Sadsbury township, Chester county, Pennsylvania, from the sting of a bee, and I wrote immediately to the postmaster of his vicinity, and subsequently to another person, requesting information of the facts, but without receiving any answer. At length, hearing that the widow of Trevalli lived in Waynesburg, Chester county, I obtained from her in December last, 1835, through the kindness of Dr. Henderson of that village, the following facts:—

On the 21st of July, in the above year, John Trevalli was stung in the temple by an humble bee, while he was engaged in cutting off the limb of a tree near his house. His wife, who was with him, saw the insect fly past her. He walked to the fence, a few steps off, and gathered two or three herbs, with which he rubbed the part that was stung, and then went to his house distant about twenty yards, and laid down; at the same time, at his request, his wife washed his face. He then desired to be raised, and to have a drink of water, adding, 'I believe I am going.' She elevated him partially, but when applying the pitcher to his lips, she found them cold. She does not recollect to have seen him breathe afterwards. When she washed his face, it was very red; but the temple was scarcely altered, nor did he complain of pain. The time between the sting and his death, Mrs. T. states, could not have been more than ten minutes, if so long. The body, after death, became livid, and when about to be buried, nineteen hours after death, was highly offensive. The weather, however, was very hot, and the man corpulent.

In the month of August of the preceding year, he had been stung in the middle finger of his right hand, and immediately became so faint as to be obliged to lie down, and was insensible to all surrounding objects. His complexion assumed a dark or livid aspect, his breathing became slow, and the perspiration flowing from his body saturated his clothes. In this state he remained for an hour and a half, when Dr. Scoffield, of Sadsburyville, who was called, bled him. His finger was but little if at all swollen. From the statement of his widow, it appears that he was so peculiarly sensible to the stings of insects, that the bite of a flea was followed by a pimple as large as a pea.

2. For the following account, I am indebted to Dr. John P. Warren of Wardsborough, Vermont, May, 1832.

"Of the circumstances of the death of Mr. Ebenezer Fisher, there is but one man (a Mr. W.) now living, from whom any precise information can be obtained. He was the only individual with or near him when he expired. From him I have gathered the following particulars and symptoms, which may, it is believed, be relied on as correct.

"In the month of June, 1811, Mr. Fisher was summoned to his house, half a mile distant, with Mr. W., to hive a swarm of bees. While thus employed, he was stung in the *septum* of the nose. Mr. F. desired Mr. W. to remove the sting, which he did, and, as he believes, entirely. In a moment, he complained of feeling strangely, as he expressed it,—said he was faint, and called for water, of which he drank a small quantity. He walked, supported by Mr. W. into the house, a few steps distant, in great distress and agitation; he laid down, but quickly arose again, and said he must go to the *brook*, which was near the house; he stept a few paces only, Mr. W. having hold of him, when he fell, and in a minute or two expired. Thus, Sir, probably in less than 30 minutes from the sting, was this man, in the vigour of manhood, and in the possession of perfect health, hurried from the stage of action. Medical aid was not had in time to administer relief.

"The weather being hot, the funeral rites were attended *next* day. Though young, yet I recollect very distinctly the appearance of the corpse. The skin was of a deep purple tint, studded with petechiæ."

3. Mr. White, of Louisville, Kentucky, aged 35 years, on the 27th June, 1836,

while standing before a bee-house, in the yard of his dwelling, in company with Mrs. W., was stung on the ciliary ridge, by a bee which he had the moment before released from its entanglement in her hair, by shortening his forefinger on his thumb, and giving it a fillip.* Mrs. W. immediately extracted the sting, and rubbed the wound with some leaves. After standing about a minute, he complained of a universal pricking over the whole surface of the body, as well as internally, and laying down on the porch, expressed his belief of a speedy death by a cant local phrase, "I am a goner." His partner went for a physician, distant three squares, who being at the door when he arrived, mounted his horse, and galloped to the house of Mr. White, whom he found dead. During the temporary absence of his partner, an ineffectual attempt was made to bleed him at the arm, but a small quantity was procured by opening a vein in the foot, by his father-in-law. As his pulse sank rapidly, stimulating applications were made to the surface without effect. Not more than twenty minutes elapsed from the time of receiving the puncture, to his death. Dr. Bell states that many similar cases have occurred in the vicinity of Louisville.

The above statement is made up from the letters of Dr. Theodore S. Bell, of Louisville, and Dr. James Ritchie, who kindly made the necessary inquiries at my request.

4. *Effects of a bee-sting, cured.*—On the 10th of July, 1836, Mr. Wm. Dorman, aged 26 years, of Coventry, Connecticut, was stung by a bee, on the under side of the tip of the nose, while hiving a swarm. He had been stung by a bee on his cheek about fifteen minutes previously, without suffering; but on receiving the second sting, he was instantly affected with an indescribable sensation over his whole body, with a prickly feeling, and white and red spots in the palms of his hands, and on his arms and feet. Tears at the same time involuntarily flowed; the nose and face swelled, accompanied with hoarseness, loss of taste, oppression at the pit of the stomach, and difficulty of breathing. On his way home, which was distant about half a mile, he felt a great disposition to sleep, with increased difficulty of respiration, and, by the time he reached his house, his face, throat, breast, and limbs were considerably swelled, with an increase of the other symptoms. He drank a little water, in which salt had been dissolved, and applied some to his face. He was soon after seized with chilliness, cold extremities, and nausea. Ten grains of Dover's powder were given to him, with several doses of the expressed juice of plantain, and an infusion of it and lettuce. Plantain leaves were also applied to the face, and in about an hour some of the symptoms began to subside; but the swelling of the face continued for several days, and the prickly sensation returned during a week or two, after fatigue or much exercise. Mr. D. now (Sept. 2nd) enjoys his usual health.

As this case terminated fortunately, I have been particular in enumerating the remedies used. If remedial effects are to be ascribed to any of them, I should give the credit to the plantain juice, the antivenomous virtues of which are firmly fixed in the minds of every American, and are very commonly believed to be equal to the cure of a snake bite. It is certainly worthy of future trials, and should it be proved again beneficial, we may be thankful that it is to be found by the side of almost every road.

II. *Stings of Wasps.*—1. Henry Stitzel, a respectable and wealthy farmer of Richmond township, Berks county, on Saturday the 24th of October, 1835, on his return, at noon, from the field which he had been ploughing, went to the press to take a drink of cider, but no cup being at hand, he used a small tin funnel as a substitute, and throwing back his head, permitted the liquid to run from the pipe into his mouth. The cider tub, as he stated, (and as is usual,) was covered with bees and yellow wasps, one of which must have been in the pipe, for he immediately felt the sting in the left side of his throat, but, as the pain was trifling, it did not prevent his dining, or resuming work in the afternoon. In a short time, however, his throat began to swell, when he returned home, and sunk exhausted in a chair, from which he never again rose. His throat was greatly swelled, voice hoarse, respiration and deglutition much impeded. He was bled by Dr. Maurer of the vicinity, and after Dr. Wiley arrived, about 5 o'clock, P. M., he was bled

*Dr. James Ritchie informs me, that from the inquiries he made, the precise spot stung was "the right superior palpebra, midway between the tarsi and supercillary ridge and near the external canthus."

twice, a blister applied to the throat, and liquor ammoniæ carb. given him internally without relief. A cup was then applied to the blistered surface, over the affected tonsil, and kept on until about twenty-four ounces of blood were taken away. Dr. Hiester arrived the next afternoon from Reading, at whose suggestion, a cup was applied to the opposite side of the throat without relief, when, at the urgent request of the patient, he performed the operation of tracheotomy; but, after respiring two or three times through the pipe, he expired. No examination was made, owing to the objections of the relatives; but, before his death, Dr. Wiley observed a small white speck about half an inch to the left of the glottis. The swelling of the tonsil had entirely subsided before death. The difficulty of deglutition did not appear to depend upon the swelling of the throat, but the irritability of the glottis, for a drop of liquid applied to the tongue almost suffocated him. He died at three o'clock on Sunday afternoon, twenty-seven hours after being stung, twenty-four of which he suffered, according to Dr. Wiley, beyond any human being he had ever seen. It may be worthy of note, that the urgent symptoms had two or three remissions, and then returned with increased violence."*

2. As Mr. Artemas Hemmenway, of Pepperell, Massachusetts, on October 5th, 1834, was dipping some new cider out of a vat, he was stung by a yellow wasp on the middle finger of his right hand. He cried out immediately that he was in great pain, and a person who was near came and extracted the sting from the wound. The rapid increase of his anguish obliged him to be led to his house at a distance of not more than ten rods from the spot where the accident happened, when he threw himself on his bed, unable to support himself, appearing, however, to have no local pain, but complaining of a universal distress. There were neither sickness of the stomach, nor spasms of any kind. He complained of an uneasiness in the bowels for a few moments, soon after his countenance became livid, and sinking into a state of insensibility, he expired in less than twenty minutes from the time that he was stung. A physician was instantly sent for, and arrived in about half an hour after Mr. Hemmenway's death, when the body was found to be in such a state as made it inexpedient to examine it.—*Boston Galaxy.*

III. *Bite of a Spider.*—On the 3d of July, 1820, Mr. Nash, of Plymouth, Chenango county, New York, was stung by a spider in one of his feet while he was hoeing in a field. The next day lymphatic streaks were perceptible as high up as his knee, on which was a purple swelling; a medical man being called, he bled him, but he expired soon after.—*National Recorder, Philadelphia.*

I find in Orfila on Poisons, several references to different European authors for similar affections from the stings of the above-mentioned insects.

1. Desbret mentions the sting of a bee above the eye-brow followed by death, and profuse hæmorrhage from the nose.—*Journal de Medecine*, 1765.

2. Zacutus saw the sting of a bee followed by gangrene of the part.

3. Delaistre mentions a death from the sting by a hornet (*Vespar cabro*) in the palate, which caused inflammation, as in the case of Stitzel, and suffocation by impeding respiration.—*Gazette de Sante*, 1776.

4. A man stung in the middle finger of his right hand, was instantly deprived of the power of action; the pain was like that which would take place from penetrating the joints by a cutting instrument; the hand, arm, and head were inflamed; the eyes were suffused; red lines indicated in the arm the course of the absorbents; and in ten minutes insensibility followed; vomiting, and the pulse scarcely perceptible. He was forced by his friends to walk about, and when he could swallow he took volatile alkali, but he remained in a state of languor for several days. The same accident had happened to him five years before.—*Bibliotheque Medicale*, 1819.

He also mentions the stings of spiders, and scorpions, and the notorious tarantula.†

Orfila quotes Delaistre for the facts of relief being instantly obtained from the application of poppy juice to a bee sting;‡ and from a strong draught of common salt and water in the case of a sting from a wasp in the œsophagus, which had been swallowed in a glass of beer.

* Letter from Dr. Wiley.

† Orfila Toxicologie Generale, tom. 2nd, p. 561.

‡ Journal de Med. tom. I. p. 309.

This last fact is taken from Dict. des Sciences Medicales, article "Abeille." It is probable that it was to Delaistre I alluded, when I stated the same cure for a wasp's sting in the throat, in a paper which I read to "the Philadelphia Society for promoting Agiculture," in the year 1825, "on the diseases and accidents to which farmers are particularly subject."* In the same paper I mention, "that the pain from the stings of wasps, bees, and hornets, is quickly relieved by rubbing the part with either olive oil, or cold ley. Common salt moistened, and applied to the part, has been recommended from experience;" and I have recently seen it stated that the application of vol. alkali to the part, gave immediate ease. These several remedies are mentioned, as they all have the sanction of experience. The sting should be extracted.

Orfila does not account for the sudden extinction of the vital principle from the stings of insects, and I certainly shall not attempt the solution of the question.

I might, indeed, descant on vitality—its principle, and retail the numerous theories of authors on these subjects, but how much nearer should I be at the close, to the discovery of the mystery in question?

—

Extract of a Letter from a medical gentleman, at Paris, dated Paris, May 22nd, 1836, communicated by DR. SEWALL *of Washington, D. C.*

"A case has lately occurred at the Hotel Dieu, an account of which will perhaps be interesting to you. A man was received with a burn of the arm so extensive and deep seated, that amputation was deemed necessary by Roux. The eschar extended so high up that there was not sufficient space for him to make a flap by continuity; and his only resource therefore was amputation at the shoulder joint. He performed the operation—but the man died on the table. His sudden death could only be attributed to either the entry of air into the veins, or the tremendous shock transmitted to the nervous centre, by the lesion of the axillary plexus. To the former Roux ascribed it. He said he distinctly heard the peculiar hissing noise, (sifflant) described by Delpech, as invariably attending the entrance of air into the veins; and the examination of the gas, with which the heart was found distended, still further confirmed him in his opinion. He gave a long lecture on the case some days after, and mentioned that the only preventives to such an unfortunate occurrence could be compression, if practicable, tying the veins, if not, and disturbing their position as little as possible during the operation. But, that when the air had once entered, no remedies could be of any avail; that death was inevitable. Majendie, who is giving a course of public lectures on physiology, which I attend, at the Royal College of France, being at that time on absorption, took occasion to notice Roux's case, and devoted a particular lecture to the subject of the entrance of air into the veins. Bichat asserts that if one single bubble of air is absorbed by the veins, it causes death. This Majendie denied, and said that the absorption of the air was altogether mechanical, and that death in such cases, could only be explained on physical principles, which he proved most conclusively, by the following experiments—1st. He opened the jugular vein of a small dog, and introduced SLOWLY the air contained in a syringe of about ¼ of an inch in diameter. He injected, at least, twenty or thirty bubbles in this way, but the dog got up after this and walked about, evincing very little disturbance of the vital phenomena. He said he had frequently seen air combined with liquids thus introduced into the veins, and no fatal effects ensued. He has himself introduced thirty litres SLOWLY into the veins of a horse, without causing death; but if the air is injected RAPIDLY, not having time to unite with the blood, then death immediately takes place. To prove which, he took the same dog, and the same quantity of air, and forced it into the jugular SUDDENLY; the animal *instantly* expired. On examining the heart, the right or venous side, contained a quantity of frothy blood, and was completely distended by the air: thus offering a purely *physical* obstacle to the return of the blood, an arrest of circulation, and consequently death. The left ventricle was flaccid, and contained but a few drops of blood. He spoke of the noise noticed by Delpech, and said that it *always* was produced, when venous absorption of the atmospheric air occurred. Dupuytren once opened the subclavian vein accidentally, and the noise was so distinct and peculiar, that he supposed he had opened the *pleura;* but on examination, he found

* Memoirs of the Agric. Soc. Vol. V. p. 232.

the heart and veins near it, completly inflated with air. These accidents are very rare, they generally occur from the veins being rendered inflexible, and consequently patulous, when opened, from alteration of tissues, or from their parietes adhering to tumours through which they pass, &c. When their natural flexibility is thus altered, and they are situated near the thorax, the danger in opening them is always very great. 3d experiment: He opened the jugular vein of a larger dog, and allowed the air to enter naturally, by placing a catheter in the vein. The noise was distinctly heard, and the dog shortly afterwards commenced to sink rapidly, when M. Majendie introduced a large exhausted syringe, and drew from the heart a quantity of frothy blood. This he repeated several times, until it revived the animal, which he produced at his next lecture, perfectly restored. This then, is the only remedy that offers any chance for success, when unfortunately in operating air enters the heart, and the patient is sinking under its effects. He therefore advises, when operations are performed near this organ and large veins are liable to be opened, that the surgeon should have at hand a gum elastic tube and a syringe, at least, to attempt resuscitation should such an appalling accident occur."*

—

Case of Monstrosity. By S. R. Campbell, M. D., of Albemarle co. Va.—September 8th, 1835, I was called to see Mrs. L. J. P. in her fourth labour. She is a lady of delicate constitution and frame; and of sedentary habits. At two previous labours she has suffered from a retention of the placenta by firm adhesion to the uterus, which required manual interference to effect the delivery. When I arrived labour had commenced. Upon examination I found the os tincæ well dilated; and the membranes protruding (as I then supposed) very much distended. After waiting some time and labour pains coming on more rapidly, she insisted on rising to her feet to be delivered, as had been her custom in her previous labours. She was gratified; and as soon as she rose a small discharge of blood took place without any liquor amnii. Upon examination I found the elbow with something that I could not determine by the touch, presented, and which I at first supposed to be the membranes, but which subsequently proved to be the naked bowels of the infant. The lady discovered the blood on the floor, became alarmed and her pains immediately left her. She was put to bed again, and after waiting a considerable time without any return of uterine contraction, I administered a dose of ergot, which brought them on again, and she was speedily delivered of a deformed female child, which left the mother without any attachment by a funis that I could discover. This case also required the introduction of the hand for the delivery of the placenta, which was found very firmly attached to the fundus uteri, and removed with very great difficulty, owing to the want of a funis to direct the operation. At this time the lady has a fair prospect of recovery. I obtained the consent of the parents to preserve the child, which I have now in my possession; and of which I will give as accurate a description as I am capable. The head, neck, arms, and thorax, are all normal as to size and form. The anterior parietes of the abdomen between the zyphoid cartilage and the symphysis pubis and the ends of the false ribs and the spines of the ilium were deficient, the bowels being covered by a thin membrane only, which was ruptured before delivery. There was no appearance of an umbilicus, except a single, very small artery, without either vein or external covering, which issued from a point midway between the last false rib and the spine of the ilium, where the muscles and skin terminated. The vertebral spine is curved backwards and a little to the right side, the hips lying against the lumbar vertebra. The right lower extremity is of normal size and shape, with the knee lying against the right shoulder; the leg is flexed on the thigh, and the instep lying on the cranium, where the sagittal suture meets the lambdoidal. The left lower extremity is deficient in part, the thigh being shorter than the right, and the knee or joint (more like the hock of a horse's hind leg) is flexed forwards towards the bend of the right knee, where the leg, about an inch in length, terminates. From the upper part of the right hip there arises a fleshy protuberance about an inch and a half in length, and

* In the *American Cyclopedia*, Art. Air, Vol. I. p. 266, will be found an account of the interesting experiments of Nysten relative to this subject, and the histories of several cases in which air entered into the veins during operations.—Ed.

half an inch in diameter at the base; an inch from the base it bends downwards at an angle of 45 degrees, and from the bend to the point it tapers like the prepuce of an infant's penis. The external genital organs are normal. The uterus, the ovaria, and all the internal organs of generation, are deficient, except the vagina, which terminates in a sack. There was but one kidney that could be discovered, and it was larger than natural, and misplaced, being attached to the diaphragm above and in front of the stomach. All the other organs of the pelvis, abdomen and thorax, were normal. Wishing to preserve the child in spirits in its natural form and position, no further examination was made.

—

Case of Inversion and Prolapsus of the Uterus. By THOMAS F. BETTON, M. D.—On the evening of the 4th of August, 1836, I was called to see the wife of S. R., living at the Rising Sun Village. On my reaching the house, I found a woman of about 18 years of age, *in extremis.* The midwife gave me the following history. The patient had had an easy delivery, the midwife placed her hand upon the abdomen, to feel if the uterus were contracted; but could not perceive it. A violent pain followed immediately, and the placenta, with something adhering to it which she did not understand, was forcibly expelled. This I found, on examination, to be the uterus, completely inverted and prolapsed, laying like an inverted gum elastic bottle between the thighs. I immediately separated the placenta and endeavoured to restore the uterus, which endeavour was successful in two or three minutes. The woman was pulseless from loss of blood, the carotids could not be felt, and the action of the heart was extremely feeble. Jactitation extreme, mind wandering. About twenty ounces of blood had coagulated around the uterus, and between it and the placenta, which was partially separated. As she lived at some distance, I did not see her for about an hour after the occurrence of the accident, and she had lost at least eighty ounces of blood before my arrival. She did not lose more than two or three ounces after the reduction of the uterus; but, in her exhausted state, that was too much. I gave her immediately a large dose of the vin. tinct. of secale cornutum, but it failed in its expected effect. Brandy and wine and water were liberally administered, but in three quarters of an hour after my first seeing her, she expired.

—

Fracture treated by bandage. The April No. of our cotemporary the *Transylvania Journal* contains brief notices by Dr. BUSH of 11 cases of fracture and one of wound with an axe, treated by Prof. DUDLEY by the Bandage. "Few days pass" says Dr. Bush, in which this remedy is not employed by Dr. Dudley in the treatment of local injuries, and with the most unvarying success. Except in fractures of the fore arm, he rarely finds it necessary to use a splint; and in the course of his long and extensive practice, he has amputated but a single leg in consequence of fracture, and that was in the case of a maniac who could not be controlled. In gun-shot wounds, regarded by most authors as *sui generis*, and as requiring, therefore, a peculiar treatment, he relies with the utmost confidence upon mechanical pressure alone. In amputations, the stump receives from him no dressings except the common roller—no lints, unguents, plasters or tow interfere with nature in her restorative process; and the consequence is, that no deep-seated abscesses, no exfoliations of bone, or tedious stumps follow his operations.

"Such results, it must, nevertheless, be admitted, have not uniformly attended the use of the bandage in the hands of other surgeons. Mortification and loss of the limb, and sometimes of life itself, have resulted from its application. I am apt, however, to believe that this has been in consequence of mismanagement. Those who have attended upon the operations of the gentleman whose cases have just been reported, and have seen how surely by means of it he controls swelling, subdues muscular contraction, promotes absorption, and favours the restoration of injured parts, will not easily be persuaded that mischief can ensue when it is skilfully used."

—

Malformation. The following curious malformation was met with last winter by Dr. BUSH in the anatomical apartments of the Transylvania University. The subject, a man aged about 45 years, first attracted Dr. B.'s attention "while lying on the table for dissection as having no umbilicus, in the appropriate

region; but an apparently smooth cicatrix at the scrobiculus cordis, about two inches in diameter, seemed to be its substitute. This portion of the abdominal walls was made up of dense cellular matter. The liver was found most intimately attached to its inner surface, by peritoneal adhesion. No traces of the remains of an umbilical vein were discoverable. The liver, in place of its usual division into two great lobes, presented a single rounded mass. The right kidney immediately under the liver, deserting its proper locality, occupied, with a large portion of the ileum, the right hypochondriac region. The stomach exhibited a wide departure from its ordinary form, being unusually long and narrow. The small intestines, after making numerous convolutions in the umbilical region, passed over to the right iliac, ascending in the usual tract of the colon through the right lumbar, gained the right hypochondriac, and descended to constitute the valve of the colon at the ordinary place. At this point commenced the cœcum, with its appendix, and the colon originated to ascend obliquely across the abdomen, in front of the lesser bowels, to the left hypochondriac region, whence it pursued its customary course. The bladder had the urachus reaching from its fundus to the point answering to the umbilicus. The urachus was half the size of a man's wrist, and on distending the bladder with air it was also filled, presenting a beautiful hollow pyramid surmounting the bladder. The ductus communis choledochus terminated in the duodenum some six inches below the pyloric orifice, being received by a pocket projecting from the bowel two inches in length, and of a diameter equal to that of the bowel.—*Trans. Journ.*, Ap., 1836.

—

Chloride of Lime in Ozæna. Dr. James Heron in a paper read before the Medical Society of Orange Co., New York, (U. S. Med. and Surg. J., Oct., 1835.) states that he has employed solutions of Chloride of Lime and Soda in ozæna, as recommended by our colleague Dr. Horner (see this Journal, Vol. VI. p. 265.) with entire success, and he expresses himself as so confident of their efficacy that he believes no ordinary case of the disease will resist their proper use. We regret to have to state that our experience does not countenance such confidence in the remedial powers of this application. In three cases in which we have faithfully tried it, no benefit was experienced save the destruction of the fœtor of the discharge during its use.

—

Case of poisoning with Datura Stramonium; showing the uncertainty of circumstancial evidence in Medico-legal investigations.—By Charles Hooker, M. D.—An Irish family was taken suddenly ill, after eating a dinner of corned beef and boiled greens. The family consisted of five persons, Mr. T., his wife, and three children, the eldest about eight, the youngest about five years of age. I saw them about an hour after dinner, when the symptoms were immediately recognised as the effects of the Datura. The countenances had a wild, idiotic expression—the pupils widely dilated—the sensorial functions perverted—and the muscular system subject to an irregular agitation somewhat resembling that of chorea. The appearance of the family was extremely ludicrous. The children were laughing, crying, singing, dancing, and playing all imaginable antic pranks. They had no correct estimation of distances, or the size of objects—were reaching their hands to catch hold of objects across the room, and again running against persons and things which they appeared to view as distant. The nail heads in the floor were pieces of money, which they eagerly tried to pick up. A boy, apparently fancying himself undressed, caught a hat belonging to a student, thrust his foot into it, pulled with both hands on the brim, and began to fret that he could not "get on his trowsers." The parents frequently called on the children to behave themselves; but their own actions being equally eccentric, they afforded a ridiculous exhibition of family government.

Sulphate of zinc with ipecac. brought from the stomachs a large quantity of the Datura plant with other green vegetables; and under the use of Camphor, Carb. Ammoniæ, and a warm aromatic infusion, the narcotic symptoms soon subsided.

The cause of these symptoms was no sooner known, than suspicions were fixed on a Mrs. A., a woman of indolent, intemperate habits, who lived in the same house. The Irish family moved into the house about a week previous—a circumstance which gave some offence to Mrs. A. Until this morning she had avoided

speaking to her new neighbours, and she had never mentioned them except in harsh and threatening language. She had frequently wished the family dead —hoped they would all die if they remained in the house—and intimated a willingness to "poison them if she could get a chance." This morning her tone suddenly changed—she came into Mrs. T.'s room, addressed her in terms of extreme kindness, engaged in free conversation, and at length remarked that she observed Mr. T. had provided a fine piece of corned beef for dinner, advised Mrs. T. to boil a mess of greens with the beef, and herself went out to gather the greens.

Mrs. T. and the eldest two children, who picked over and washed the greens, declared that Mrs. A. gathered the whole of them. She gathered the greens in a field where the Datura was abundant. It appeared evident, moreover, that she could not have gathered the plant ignorantly, since, only a few days previous, she had pointed out "the poison stramonium" to some neighbours, earnestly cautioning them against the use of it. Another circumstance to increase suspicion was that she left the house immediately after the family sickened, and was not found until after considerable search and inquiry.

Circumstances seemed strong against Mrs. A., and measures were taken towards a criminal prosecution. The youngest Irish child was scarcely five years old, and had been considered as incapable of giving any information on the subject. Fortunately for Mrs. A. it occurred to me that this child would at least be free from any design to give the matter a false colouring; and, on being questioned in regard to the greens, with the usual candid simplicity of a child, she immediately led us into the back yard, where the Datura grew in profusion, and showed where and how she gathered greens for dinner. The mother, who before had concealed this fact, probably from feelings of hatred and malice towards Mrs. A., now confessed that a small basket full of the Datura, gathered by the little girl, was mixed with the mess for dinner. Still the very sudden conciliatory conduct of Mrs. A. towards the Irish family seemed unaccountable. Probably, however, this circumstance might be explained by the fact, that with her accustomed indolence, she had made no provision for dinner; and, seeing a piece of beef carried into the other part of the house, she adopted this plan, as a matter of policy, in expectation of an invitation to dine with the family.—*Boston Med. and Surg. Journ.* 31 Aug. 1836.